

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	10705	ampoule with (tube or tubing or housing or cylinder or container)	US-PGPUB; USPAT
2	BRS	L2	484	1 and ampoule with (filter or spacer or holder or stopper or plug)	US-PGPUB; USPAT
3	BRS	L3	3	2 and ampoule with end with concav\$9	US-PGPUB; USPAT
4	BRS	L4	3	2 and ampoule with end with (concave or convex)	US-PGPUB; USPAT
5	BRS	L5	5	2 and ampoule with end same (concave or convex)	US-PGPUB; USPAT
6	BRS	L6	572	ampoule with (inside or within) with (tube or tubing or housing or cylinder or container)	US-PGPUB; USPAT
7	BRS	L8	2	7 and ampoule with end same (concave or convex)	US-PGPUB; USPAT
8	BRS	L7	128	6 and ampoule with (filter or spacer or holder or stopper or plug)	US-PGPUB; USPAT
9	BRS	L9	165	1 and (indicator or reagent) with ampoule	US-PGPUB; USPAT
10	BRS	L10	29	7 and (indicator or reagent) with ampoule	US-PGPUB; USPAT
11	BRS	L11	29455	(ampoule or vial) with (tube or tubing or housing or cylinder or container)	US-PGPUB; USPAT
12	BRS	L12	7566	11 and (ampoule or vial) with (filter or spacer or holder or stopper or plug)	US-PGPUB; USPAT
13	BRS	L13	5	2 and (ampoule or vial) with end same (concave or convex)	US-PGPUB; USPAT
14	BRS	L16	35	12 and (ampoule or vial) with end same (concave or convex)	US-PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
15	BRS	L17	70	11 and (ampoule or vial) with end same (concave or convex)	US- PGPUB; USPAT

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NEWS 11 SEP 28 CEABA-VTB classification code fields reloaded with new  
classification scheme  
NEWS 12 OCT 19 LOGOFF HOLD duration extended to 120 minutes  
NEWS 13 OCT 19 E-mail format enhanced  
NEWS 14 OCT 23 Option to turn off MARPAT highlighting enhancements available  
NEWS 15 OCT 23 CAS Registry Number crossover limit increased to 300,000 in  
multiple databases  
NEWS 16 OCT 23 The Derwent World Patents Index suite of databases on STN  
has been enhanced and reloaded  
NEWS 17 OCT 30 CHEMLIST enhanced with new search and display field  
NEWS 18 NOV 03 JAPIO enhanced with IPC 8 features and functionality  
  
NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.  
  
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=> s (ampoule or vial or bulb) (s) (filter or stopper or holder or plug or spacer or grating or grate)

L2 1280 (AMPOULE OR VIAL OR BULB) (S) (FILTER OR STOPPER OR HOLDER OR PLUG OR SPACER OR GRATING OR GRATE)

=> s (ampoule or vial or bulb) (s) (tube or tubing or cylinder or housing or container) (s) (filter or stopper or holder or plug or spacer or grating or grate)

L3 288 (AMPOULE OR VIAL OR BULB) (S) (TUBE OR TUBING OR CYLINDER OR HOUSING OR CONTAINER) (S) (FILTER OR STOPPER OR HOLDER OR PLUG OR SPACER OR GRATING OR GRATE)

=> s l3 and (indicator or reagent)

L4 21 L3 AND (INDICATOR OR REAGENT)

=> s l2 and (indicator or reagent)

L5 65 L2 AND (INDICATOR OR REAGENT)

=> display l5 1-65 ibib abs

L5 ANSWER 1 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:759185 CAPLUS

DOCUMENT NUMBER: 145:309038

TITLE: Microfluidic Sequential Injection Analysis in a Short Capillary

AUTHOR(S): Du, Wen-Bin; Fang, Qun; Fang, Zhao-Lun

CORPORATE SOURCE: Institute of Microanalytical Systems, Department of Chemistry, Zhejiang University, Hangzhou, Peop. Rep. China

SOURCE: Analytical Chemistry (2006), 78(18), 6404-6410

CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An automated microfluidic sequential injection anal. system that efficiently manipulates sample and reagent solns. in the nanoliter range in .apprx.10 s per anal. cycle is described. The system consisted of a 6-cm-long, typically 75- $\mu$ m i.d., fused-silica capillary (which functioned as a sampling probe and reactor as well as a flow-through detection cell), a horizontally oriented waste reservoir that provided liquid level differences for inducing gravity-driven flows, an autosampling device holding samples and reagents with

horizontally fixed slotted microvials, and a laser-induced fluorescence detection system. Sample and reagent zones were sequentially introduced via gravity-driven flow by scanning the capillary tip (functioning as the sampling probe) through the vial slots, while vials containing sample, reagent, and carrier were sequentially rotated to the probe by programmed movement of the vial holders. Sequentially injected nanoliter zones were rapidly mixed by convection and diffusion within the carrier flow, demonstrating a behavior that conformed well to the Taylor dispersion model, and zone penetration effects were characterized and optimized under Taylor's dispersion theory guidelines. For the determination of fluorescein, a high throughput of 400 h-1 was achieved, rapidly producing calibration curves (five points) within 45 s. Owing to its adaptability to the Taylor's dispersion model, the system was used also for measuring diffusion coeffs. of fluorescent species. Potentials for using the system in enzyme inhibition assays were demonstrated by a reaction involving the conversion of fluorescein digalactoside to fluorescent hydrolyzates via  $\beta$ -galactosidase and the inhibition of  $\beta$ -galactosidase by diethylenetriaminepentaacetic acid.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:528033 CAPLUS

DOCUMENT NUMBER: 139:209188

TITLE: Method for determination of narcotic, psychotropic and offensive substances of plant and synthetic origin

INVENTOR(S): Makarov, S. A.; Simonov, E. A.; Makarov, V. G.; Kozlov, A. S.

PATENT ASSIGNEE(S): Russia

SOURCE: Russ., 8 pp.

CODEN: RUXXE7

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2205385	C2	20030527	RU 2002-103845	20020218
WO 2003071255	A1	20030828	WO 2003-RU19	20030127
W: AE, AM, AT, AU, AZ, BA, BG, BR, BY, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GE, HR, HU, ID, IL, IN, JP, KG, KP, KR, KZ, LT, LU, LV, MA, MD, MK, MN, MX, NO, NZ, PL, PT, RO, SE, SG, SK, TJ, TM, TR, UA, US, UZ, VC, VN, YU				
RW: AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR				
AU 2003206276	A1	20030909	AU 2003-206276	20030127
PRIORITY APPLN. INFO.:			RU 2002-103845	A 20020218
			WO 2003-RU19	W 20030127

AB FIELD: anal. chemical; may be applicable for determination of these substances under

field conditions. SUBSTANCE: use is made of a set having large test kit including at least 7 vials containing reagents for determination of synthetic narcotics, and a small test kit including at least 2 bottles containing reagents used for determination of narcotics of plant origin, and at least nine plugs-samplers-dispensers. EFFECT: enhanced operativity and trustworthiness of determination

L5 ANSWER 3 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:38945 CAPLUS

DOCUMENT NUMBER: 138:68271  
 TITLE: Test kit for the determination of nerve agents and phosphoric esters in aqueous solutions  
 PATENT ASSIGNEE(S): Bundesrepublik Deutschland, Vertreten Durch Bundesministerium der Verteidigung, Vertreten Durch Bundesamt fuer Wehrtechnik und Beschaffung, Germany  
 SOURCE: Ger. Gebrauchsmusterschrift, 10 pp.  
 CODEN: GGXXFR  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 20209105	U1	20030116	DE 2002-20209105	20020612
PRIORITY APPLN. INFO.:			DE 2002-20209105	20020612

AB The invention concerns a test kit for the determination of nerve agents and phosphoric esters in aqueous solns., e.g. drinking water, that is composed of a first carrier with elec. eel acetylcholine esterase coating and a second carrier that is impregnated with acetylthiocholine iodide, 5,5'-dithio-bis-(2-nitrobenzoic acid) and dichlorindophenol sodium salt. Acetylcholine esterase is mixed with an emulsifier and thickening agent and applied to a plastic foil, e.g. Nylon. The carrier for the other reagents is filter paper. The carrier with the enzyme is placed into a glass vial and the reagents-containing filter paper is mounted inside the vial cap.

L5 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2002:275863 CAPLUS  
 DOCUMENT NUMBER: 136:295023  
 TITLE: Multi-well rotary synthesizer with sealing waste tube system for synthesizing polymer chains  
 INVENTOR(S): McLuen, Gary R.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: PCT Int. Appl., 34 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002028524	A2	20020411	WO 2001-US30612	20010927
WO 2002028524	A3	20030130		
WO 2002028524	C2	20030530		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002024339	A5	20020415	AU 2002-24339	20010927
PRIORITY APPLN. INFO.:			US 2000-679142	A 20001003
			WO 2001-US30612	W 20010927

AB An apparatus for synthesizing polymer chains includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a

cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials, and a waste tube system for purging material from the vials. A purging operation can be selectively performed on one or more of the banks of vials. The multiple banks of valves provide an addnl. number of reagent choices while operating in a serial mode and faster reagent distribution while operating in a parallel mode. The plurality of vials are stored in the cartridge and are divided among individual banks wherein each bank of vials has a corresponding drain. There is at least one waste tube system for expelling the reagent solution from vials within a particular bank of vials when the waste tube system is coupled to the corresponding drain. The cartridge holding the plurality of vials rotates relative to the stationary banks of valves and the waste tube system. The controller rotates the cartridge and operates the banks of valves and the waste tube system in response to the required sequence of dispensing various reagent solns. and flushing appropriate vials in order to form the desired polymer chain within each vial. Preferably, the waste tube system includes a drain plug ball within a drain plug and a waste tube with a vertical sliding member. During a flushing procedure, the waste tube is raised so that the vertical member engages the drain plug ball, breaking a seal maintained by the drain plug ball and allowing material to be flushed from the corresponding bank of vials through the waste tube. During all other times, the drain plug ball is forced against an O-ring by a spring in order to maintain the seal within the drain plug.

L5 ANSWER 5 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:693178 CAPLUS  
DOCUMENT NUMBER: 135:238912  
TITLE: Automated specimen processing apparatus with fluid detection  
INVENTOR(S): Kalra, Krishan L.; Zhang, Jason; Bahl, Suneet  
PATENT ASSIGNEE(S): Biogenex Laboratories, USA  
SOURCE: PCT Int. Appl., 70 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001068259	A1	20010920	WO 2001-US8386	20010315
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1284823	A1	20030226	EP 2001-922413	20010315
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRIORITY APPLN. INFO.:			US 2000-189815P	P 20000316
			WO 2001-US8386	W 20010315

AB An automated specimen processing apparatus for dispensing a reagent onto a mounted specimen comprising a support framework, at least one reagent vial holder movable arm, multifunction Z head. The device also includes a dispensing means that comprises at least one reagent tip head, first control means for positioning the tip head, means for withdrawing fluid from the vial, and a second control means to detect the fluid level in the reagent vial. Diagrams describing the apparatus are given.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2000:824380 CAPLUS  
 DOCUMENT NUMBER: 134:2304  
 TITLE: Metal chelating filters and metal chelate filters  
 INVENTOR(S): Kachab, Edward Hanna; Barnett, Graeme Ross; Smith, Martin  
 PATENT ASSIGNEE(S): Panbio Ltd, Australia; Whatman International Limited  
 SOURCE: PCT Int. Appl., 43 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000070012	A1	20001123	WO 2000-AU477	20000515
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1183327	A1	20020306	EP 2000-926556	20000515
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRIORITY APPLN. INFO.:			AU 1999-343	A 19990514
			WO 2000-AU477	W 20000515
AB A method of making a metal chelate filter or metal chelating species filter includes the following step of: treating a filter having a pore size of 0.01 to 1000 $\mu$ and accessible functional groups with a metal chelate or metal chelating species to provide the metal chelate filter or metal chelating filter species. Sheets of GF/F glass microfiber filters were functionalized with 3-aminopropyltriethoxysilane, reacted with Fmoc $\alpha$ -aminocaproic acid, deprotected, reacted with nitrilotriacetic acid, and complexed with zinc sulfate. The filters were used in assays and immunoassays and to capture proteins.				
REFERENCE COUNT: 3			THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT	

L5 ANSWER 7 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2000:765794 CAPLUS  
 DOCUMENT NUMBER: 134:357541  
 TITLE: Evaluation of a container closure integrity test model using visual inspection with confirmation by near infrared spectroscopic analysis  
 AUTHOR(S): Birrer, Gregory A.; Liu, Jie; Halas, John M.; Nucera, George G.  
 CORPORATE SOURCE: Baxter Pharmaceutical Products Inc., New Providence, NJ, 07974, USA  
 SOURCE: PDA Journal of Pharmaceutical Science and Technology (2000), 54(5), 373-382  
 CODEN: JPHTEU; ISSN: 1076-397X  
 PUBLISHER: PDA, Inc.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The objective of this study was to evaluate a novel test model involving an easy and rapid method to assess parenteral container/closure integrity. In this study, an extremely hygroscopic powder (methacholine chloride) was filled into the test vial/closure combination and served as an



indicator of water vapor ingress into the package through either the stopper/glass interface and/or permeation through the closure. A visual means of detection was used initially, as the powder liquefies upon contact with a high-humidity environment. A further level of sensitivity was gained by using Near Infra-Red (NIR) spectroscopy to confirm that no addnl. water vapor was detectable in the test vials after being subjected to autoclave (worst-case water ingress) treatments. After two sequential autoclave cycles, none of the samples in the pilot study showed liquefaction of the indicator powder. This indicated that there was negligible ingress of water vapor, and therefore, the container/closure combination provided an adequate barrier to moisture ingress at the stress temperature and pressure conditions studied. The sensitivity of the NIR water ingress detection method was shown to be in the range needed for an acceptable vial integrity test. In conclusion, the model evaluated in this study can be used as an easy, rapid, and non-destructive closure integrity evaluation test. The use of such a NIR spectroscopy method would be immediately and directly amenable to the evaluation of vial integrity of dry powder-filled and lyophilized products, or can be used indirectly as shown in this study to assess container closure integrity for liquid-filled parenteral vial closure systems.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:747767 CAPLUS

DOCUMENT NUMBER: 129:339125

TITLE: Portable analysis apparatuses for field measurements

AUTHOR(S): Kicinski, Heinz Guenter

CORPORATE SOURCE: Paderborn, D-33104, Germany

SOURCE: CLB Chemie in Labor und Biotechnik (1998), 49(11), 429-430, 431-433

CODEN: CCLBEW; ISSN: 0722-6764

PUBLISHER: Umschau Zeitschriftenverlag Breidenstein

DOCUMENT TYPE: Journal; General Review

LANGUAGE: German

AB A review with no refs. on the title subject covering equipments based on photometric procedures, reflectometry test sticks, and mobile GC, LC, and MS devices. The photometric devices include: photometry with readily prepared test reagents, photometric water anal. with vacuum ampoules, photometers with program chips, photometers with automatic filter choice and memory system, and programmable photometers.

L5 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:498561 CAPLUS

DOCUMENT NUMBER: 121:98561

TITLE: Accuracy in standards preparation for neutron activation analysis

AUTHOR(S): Greenberg, R. R.

CORPORATE SOURCE: Chem. Sci. Technol. Lab., Natl. Inst. Standards Technol., Gaithersburg, MD, 20899, USA

SOURCE: Journal of Radioanalytical and Nuclear Chemistry (1994), 179(1), 131-9

CODEN: JRNCMD; ISSN: 0236-5731

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB Errors in preparing stds., especially multielemental stds., are reviewed. They are

extremely important if accurate results are desired from neutron activation anal. (NAA). It is often convenient to prepare stds. for NAA from single or multi-element solns. which are then deposited onto (or

into) a suitable matrix, such as filter paper or quartz vials. There are many potential sources of error in preparing single-element stds. including: impurities and nonstoichiometric composition of the element or compound used to prepare the standard solns.; evaporative losses of solvent; inaccuracy of calibration, and imprecision of the pipets used; moisture content of elements or compds. used; contamination from reagents, equipment, laboratory environment, or final matrix of the standard; instability of standard solns. (losses via precipitation or adsorption), and losses of volatile elements during dissoln. and/or irradiation. Addnl. sources of error in preparing multielement stds. include: instability of mixed multielement solns. and cross-contamination of 1 element by the addition of a 2nd element. Procedures previously used by the author at NIST to prepare multielement stds. with concns. accurate to .apprx.1% are described. Addnl. techniques needed to prepare multielement stds. with accuracies better than 1% is discussed.

L5 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:488859 CAPLUS

DOCUMENT NUMBER: 117:88859

TITLE: Bacteriological testing of raw milk with firefly luciferase

AUTHOR(S): Schram, E.; Weyens-Van Witzenburg, A.

CORPORATE SOURCE: Vrije Univ. Brussel, St. Genesius-Rode, 1640, Belg.

SOURCE: Biolumin. Chemilumin. Proc. Int. Symp., 6th (1991), Meeting Date 1990, 503-6. Editor(s): Stanley, Philip E.; Kricka, Larry J. Wiley: Chichester, UK.  
CODEN: 57NVA4

DOCUMENT TYPE: Conference

LANGUAGE: English

AB In the standard procedure, 0.5 mL of milk is mixed with 0.5 mL of buffer containing Triton and apyrase to remove somatic ATP, and incubated at 40° for 5 min. The mixture is then filtered in a prewarmed manifold conceived to accommodate six samples in parallel, and washed three times with 1 mL of prewarmed buffer. The filters are subsequently transferred to luminescence vials, suspended in 200 µL luciferin/luciferase reagent, and the vials introduced in the six-sample holder of a LUMICON luminometer. After counting of residual ATP, 100 µL of bacterial extractant is automatically injected and countings are resumed. The assay is finalized by the automatic injection of 100 µL of standard ATP. Specific software was developed that takes care of the automatic injection and of the calcn. of the results, including the dilution effect produced by the addition of bacterial extractant and ATP standard. Using the procedure described above, over 150 milk samples were analyzed whose bacterial contents ranged from 15,000 to 1.5 million bacteria/mL. The correlation coefficient between CFU's (colony forming units) and luminescence was 0.80. This correlation coefficient was lower when the figures for residual ATP were not taken into account. No significant effect was observed on the filtration properties of milk due to the number of somatic cells ( $0.7 \times 10^5 - 1.5 \times 10^6$  cells/mL), fat content (3.3-6.7%), protein content (2.8-3.5%) or aging for up to three days. The standard deviation of repeated measurements was 10% at the level of  $10^5$  bacteria/mL. This was further checked by showing that the addition of 20,000 bacteria to such samples could easily be detected. Further standardization of this procedure and a more stringent control of temperature during filtration would probably still improve results, but the possibility now exists to detect 10-20,000 bacteria/mL in raw milk with the procedure described in this paper.

L5 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:150942 CAPLUS

DOCUMENT NUMBER: 110:150942  
 TITLE: Reagent and method for detecting cells with phagocytic activity  
 INVENTOR(S): Polgar, Katalin; Abel, Gyorgy; Harsanyi, Ilona; Nagy, Laszlo; Sipka, Sandor; Vaszari, Edit; Daroczi, Ivan; Papp, Zoltan  
 PATENT ASSIGNEE(S): Reanal Finomvegyszergyar, Hung.  
 SOURCE: PCT Int. Appl., 14 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8807583	A1	19881006	WO 1988-HU15	19880322
W: AU, BB, BG, BR, DK, FI, JP, KP, KR, LK, MC, MG, MW, NO, RO, SD, SU, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
HU 46145	A2	19880928	HU 1987-1340	19870327
HU 197450	B	19890328		
AU 8814885	A1	19881102	AU 1988-14885	19880322
EP 345295	A1	19891213	EP 1988-902576	19880322
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
PRIORITY APPLN. INFO.:			HU 1987-1340	A 19870327
			WO 1988-HU15	A 19880322

AB The invention relates to a neutral red-containing reagent solution for detecting cells with phagocytic activity. The reagent solution according to the invention comprises lysozyme 0.1-0.25, neutral red 0.2-0.8, NaCl 0.8-2.0, saccharide 0.1-0.3, and optionally a preservative 0.02-0.6 weight% in an aqueous solution with a pH of 3.0-8.0, preferably 3.5-5.0.

The invention also relates to a method for detecting cells with phagocytic activity by utilizing a reagent solution of the above composition A reagent kit was prepared from the following solns.: (1) reagent solution: 0.1 g polyvinyl alc. was dissolved in 45 mL hot distilled water, the solution was cooled to room temperature, and then NaCl 0.8, glucose 0.1, BzOH 0.02, and lysozyme 0.1 g were added. The pH of the resulting solution was adjusted to 6.9 with 1M Tris buffer and then diluted to a final volume of 50 mL with distilled water. A solution of 0.2 g neutral red in 50 mL distilled water was added to the above solution, the mixture was well stirred, sterilized by passing through a G-5 sintered glass filter, and the filtrate was dispensed into vials each containing 1 mL of the solution (2) Washing-diluting solution: NaCl 4, KCl 0.2, MgSO4.7H2O 0.1, CaCl2.2H2O 0.09, of Na2HPO4.2H2O 0.03, KH2PO4 0.03, and glucose 0.5 g were dissolved in 350 mL distilled water, and then 0.1 g BzOH was added to the solution The resulting solution was admixed with a solution of 0.175 g NaHCO3 in 12.5 mL distilled water. The mixture was well stirred, and the pH of the resulting solution (Hank's solution) was adjusted to 7.3 with 5 mL of a 1M aqueous solution of N-hydroxyethyl-piperazine-N'-2-ethanesulfonic acid. The volume of the resulting solution was adjusted to 500 mL with distilled water, the solution was sterilized by passing through a G-5 sintered glass filter, and the filtrate was dispensed into vials each containing 5 mL of the solution Amniotic fluid 5 mL was admixed with 1 vial (1 mL) of the reagent solution The mixture was incubated for 15 min, then centrifuged, the supernatant was discarded, and the sediment was admixed

with 0.5-2.0 mL of the washing-diluting solution The stained sample was examined in a Buerker chamber.

L5 ANSWER 12 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:470938 CAPLUS

DOCUMENT NUMBER: 107:70938

TITLE: One-tube radiotransinassay for determination of cortisol at ambient temperature

AUTHOR(S): Murphy, Beverley E. Pearson; Barta, Alice

CORPORATE SOURCE: Reprod. Physiol. Unit, Montreal Gen. Hosp., Montreal, QC, H3G 1A4, Can.

SOURCE: Clinical Chemistry (Washington, DC, United States) (1987), 33(7), 1137-40

CODEN: CLCHAU; ISSN: 0009-9147

DOCUMENT TYPE: Journal

LANGUAGE: English

AB After extraction of the sample (on filter paper) in the counting vial, cortisol is assayed by adding 50  $\mu$ L of horse serum containing tritiated cortisol, and 2 mL of toluene scintillator, shaking for 20 min, and counting the radioactivity in a liquid-scintillation counter at ambient temperature The method can be applied to saliva, serum, or urine, directly as wet samples or dried on the filter paper. Only inexpensive reagents, which are stable for months to years, are needed.

L5 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:192160 CAPLUS

DOCUMENT NUMBER: 106:192160

TITLE: Microdiffusion and spectrophotometric determination of fluoride in biological samples

AUTHOR(S): Culik, Boris

CORPORATE SOURCE: Inst. Meereskunde, Kiel, 2300, Fed. Rep. Ger.

SOURCE: Analytica Chimica Acta (1986), 189(2), 329-37

CODEN: ACACAM; ISSN: 0003-2670

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Routine separation of fluoride from large nos. of biol. samples (soft and hard tissues) is achieved by microdiffusion from HClO<sub>4</sub> and absorption by NaOH on filter paper in disposable polypropylene vials. Spectrophotometry with a modified La/alizarin complexone reagent allows rapid determination of fluoride. Up to 80 samples can be processed per day. Recoveries are in the range 88-102%. Results obtained by spectrophotometry and with the fluoride-sensitive electrode agree within 3-10% for various samples of krill (*Euphausia superba*) and shrimp (*Crangon crangon*) products.

L5 ANSWER 14 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:58525 CAPLUS

DOCUMENT NUMBER: 102:58525

TITLE: Radioactive cobalt complexes for diagnosis

PATENT ASSIGNEE(S): Nihon Medi-Physics Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59164796	A2	19840917	JP 1983-38621	19830309
PRIORITY APPLN. INFO.:			JP 1983-38621	19830309

AB Radiopharmaceuticals containing Co complexes or Co oxo complexes with ethylenediamine-N,N-diacetic acid, ethylenediamine-N,N'-diacetic acid or propylenediamine-N,N-diacetic acid are described for use as reagents for diagnosis of cancer, inflammation, etc. Thus, ethylenediamine-N,N-diacetic acid (35.2 mg) in 1 mL pyrogen-free water was adjusted to pH .apprx.7.0, passed through filters with a pore size of 0.22  $\mu$ m, and filled into vials. To this was added  $^{57}\text{CoCl}_2$  (130  $\mu$ Ci) to form a  $^{57}\text{Co}$ -ethylenediamine-N,N-diacetic acid complex for use in diagnosis. After i.v. administration of 10  $\mu$ Ci of the radioactive complex to rats with transplanted Ehrlich ascites carcinomas, the highest radioactivity was found in kidneys, followed by carcinoma, liver, stomach, small intestine, spleen, and muscle.

L5 ANSWER 15 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:12177 CAPLUS  
DOCUMENT NUMBER: 102:12177  
TITLE: Apparatus of ozonized water for ozone therapy with a shower  
INVENTOR(S): Lobo Assumpcao, Paulo Roberto dos Santos; De Oliveira, Caio Maranhao  
PATENT ASSIGNEE(S): Brazil  
SOURCE: Braz. Pedido PI, 13 pp.  
CODEN: BPXXDX  
DOCUMENT TYPE: Patent  
LANGUAGE: Portuguese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 8300027	A	19840814	BR 1983-27	19830105
PRIORITY APPLN. INFO.:			BR 1983-27	19830105

AB The title apparatus comprises a rectangular box of inoxidizable steel or anodized Al connected by a flexible Cr-plated metal tube with a plastic or metal showerhead. A filter (Cr-plated metal or plastic) with activated charcoal is linked to the water outlet. The box contains a elec. key switch, a fuse holder, a small 1-amp fuse, a pilot light bulb and a voltage indicator for 110 and 220 V. The apparatus transforms O<sub>2</sub> into O<sub>3</sub> by means of elec. charges, and mixes O<sub>3</sub> gas with water for use in ozone therapy.

L5 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:198598 CAPLUS  
DOCUMENT NUMBER: 96:198598  
TITLE: Conducting organic chemistry experiments by the semimicromethod  
AUTHOR(S): Bondareva, K. G.; Afon'kin, E. V.  
CORPORATE SOURCE: Pedagog. Inst., Ryazan, USSR  
SOURCE: Khimiya v Shkole (1982), (2), 56-7  
CODEN: KHSHAY; ISSN: 0368-5632  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB An outline is presented on conducting laboratory expts. in organic chemical using

semimicromethods to minimize excessive wastes in chemical reagents. A wooden holder (400 + 200 + 30 mm) with holes (2.5 mm diameter) carrying testtubes, vials, flasks, and bottles and supplied with other necessary materials such as filter paper is made and used by students to carry out expts. with minimal amts. of reagents. Several examples are given on different laboratory expts. The method is especially recommended for students of rural and agricultural schools.

L5 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:564992 CAPLUS  
DOCUMENT NUMBER: 95:164992  
TITLE: Biochemical aspects of ram sperm viability  
AUTHOR(S): Van Eerten, M. T. W.; Forrester, I. T.  
CORPORATE SOURCE: Dep. Biochem., Univ. Otago, Dunedin, N. Z.  
SOURCE: Proceedings of the New Zealand Society of Animal  
Production (1980), 40, 130-5  
CODEN: PZAPAD; ISSN: 0370-2731  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Prior to studies on the cryopreservation of ram semen, a quant. radioassay was developed to measure  $\text{Ca}^{2+}$  fluxes in ram sperm as an indicator of sperm viability. Thus, sperm were separated by centrifugation, washed by centrifugation in sucrose buffer (0.25M sucrose, 5.0 mM HEPES-Tris, pH 7.4) containing 1.0 mM EDTA-Tris, washed with sucrose buffer, and resuspended in buffer. To determine  $\text{Ca}^{2+}$  accumulation, 0.1 mL sperm suspension was preincubated with 1.8 mL sucrose buffer containing 0.5 mM K phosphate for 1 min at  $37^\circ$ , and then 0.1 mL buffer containing 5.0 mM  $\text{CaCl}_2$  and 10  $\mu\text{Ci/mL}$   $^{45}\text{CaCl}_2$  was added. Samples (0.1 mL) were removed at interval, added to 0.16 mL ice-cold sucrose buffer containing 2.0 mM EGTA-Tris, filtered through glass-fiber filters, washed, and the filters were dried and placed in vials for liquid scintillation counting. Intact motile sperm were largely impermeable and accumulated only low levels of  $\text{Ca}^{2+}$  (50-100 nmol  $\text{Ca}^{2+}$ /109 sperm). Exposure to conditions which altered plasmalemma integrity, e.g. cold shock, hypotonic media, and filipin, resulted in a rapid and large accumulation of  $\text{Ca}^{2+}$  (1200-1500 nmol  $\text{Ca}^{2+}$ /109 sperm).

L5 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:12500 CAPLUS  
DOCUMENT NUMBER: 94:12500  
TITLE: CI Mass spectrometric analysis of physiologically active compounds  
INVENTOR(S): Mee, John M. L.; Halpern, Berthold; Korth, John  
PATENT ASSIGNEE(S): Australia  
SOURCE: U.S., 7 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4224031	A	19800923	US 1977-851666	19771115
PRIORITY APPLN. INFO.:			US 1977-851666	A 19771115

AB Compds. in biol. fluids are analyzed by including in the sample an analog of the compound of interest which differs in having an unnatural isotopic distribution. The combined analyte and analog are derivatized (if required), subjected to chemical protonation, and analyzed mass spectroscopically. The analyte is determined by determining the ratio of  $\geq 1$  of the major peaks of the analyte and its analog. In 1 example, a cholesterol analog, [2,2,3,4- $^2\text{H}_4$ ]cholesterol was prepared according to Diekman and Djerassi (1967).  $\text{CHCl}_3$ -MeOH (200  $\mu\text{L}$ , 2:1), the cholesterol analog (5  $\mu\text{g}$  in 5  $\mu\text{L}$   $\text{CHCl}_3$ ), and a dry blood spot ( filter paper disk containing 5  $\mu\text{L}$ ) were added to a reaction vial. The vial contents were mixed ultrasonically, the filter paper disk was removed, the solution was evaporated, and the residue was dissolved in 25  $\mu\text{L}$  hexane. The resulting solution was divided into 2 parts and analyzed mass spectroscopically with or without treatment with

NaOMe. Chemical-ionization mass spectroscopy was performed with isobutane (0.5-1.0 torr) as reagent gas, source temperature of 200°, and electron beam energy of 70 eV. Mass spectra for free cholesterol were recorded at 140-60°. Cholesterol was determined by comparing the spectral line intensity of [2,2,3,4-2H4]cholesterol at m/e 373 with that of unlabeled cholesterol at m/e 369. Cholesterol detns. by the mass spectroscopic method agreed closely with those by an enzymic method, and similar results were obtained with unsaponified and saponified blood samples. Other examples describe amino acid and fatty acid determination

L5 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:2776 CAPLUS

DOCUMENT NUMBER: 92:2776

TITLE: A simple and sensitive nonradioactive method for the detection of urinary human chorionic gonadotropin and diagnosis of early human pregnancy. II. Single-unit test

AUTHOR(S): Banik, Upendra K.; Hirsch, Michael A.; Irvine, Douglas S.; Krupey, John; Hurwitz, Arthur; Singh, Kartar; Wetzell, Jon; Givner, Morris L.

CORPORATE SOURCE: Ayerst Res. Lab., Montreal, QC, H3C 3J1, Can.

SOURCE: Fertility and Sterility (1979), 32(4), 426-32

CODEN: FESTAS; ISSN: 0015-0282

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This unit, the Ayerst pregnancy test kit (APTK), consists of 4 components: a sampler-filter paper cone, an ultrafilter-concentrator to which a vial holder is attached, a support stand with a mirror, and an immunol. reagent vial. In the APTK, 5-6 mL urine were sampled, filtered, concentrated, and the human chorionic gonadotropin (hCG) in the retentate was detected by Ayerst immunol. reagents [APTK(AY)] and by the Pregnosticon All In [APTK(P)]. Some of the unconcd. urine samples (0.1 mL) were also tested in hemagglutination inhibition tests (HIT) using Ayerst [HIT(AY)] and Pregnosticon All In [HIT(P)] reagents. Urine samples from pregnant, nonpregnant (ovulating and nonovulating), perimenopausal, and menopausal women were tested. APTK(AY) and APTK(P) were more sensitive and reliable than the HIT(AY) and HIT(P) in detecting low levels of urinary hCG for early diagnosis of pregnancy. The sensitivity and specificity of the APTK(AY) were better than those of the APTK(P). The APTK(AY) gave more correct pos. and neg. results than the other tests performed simultaneously. The APTK(AY) is simpler and safer than the serum radioimmunoassays and radioreceptor assay presently used to detect low levels of hCG for the early diagnosis of pregnancy and other hCG-producing states.

L5 ANSWER 20 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1970:484445 CAPLUS

DOCUMENT NUMBER: 73:84445

TITLE: "Kit" for preparation of high specific-activity technetium-99m albumin for cisternography and blood-pool imaging

AUTHOR(S): Cooper, James F.; Stern, Howard S.; Deland, Frank H.

CORPORATE SOURCE: Div. of Nucl. Med., Johns Hopkins Med. Inst., Baltimore, MD, USA

SOURCE: Radiology (Oak Brook, IL, United States) (1970), 95(3), 533-7

CODEN: RADLAX; ISSN: 0033-8419

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A four-unit kit consisting of (a) a vial of 0.1N NaOH, (b) a vial of 0.25N HCl, (c) a reaction vial containing a solution of

4 mg  $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$  and Na ascorbate equivalent to 10 mg ascorbic acid, and (d) a filter vial containing 1 g of anion-exchange resin has been used to prepare sterile, high specific-activity  $^{99}\text{Tcm}$ -labeled albumin in less than 30 min. After the  $^{99}\text{Tcm}$ -containing  $\text{NaTcO}_4$  was reduced in the presence of acidified Fe and ascorbate, the reaction mixture was made slightly basic to form  $^{99}\text{Tcm}$ -Fe complexes with ascorbate oxidation products. Following addition of human serum albumin, the reaction mixture was acidified to approx. pH 2 for labeling of the  $^{99}\text{Tcm}$  activity to the albumin. Sterile, disposable syringes are used in the transfer or addition of all components. A patient injected for radionuclide cisternography receives no more than 0.1 mg Fe and 4 mg protein. The binding efficiency of the clinical preparation ranged from 85 to 93%. In cisternography and scanning, no adverse effects related to the use of the kit were observed

L5 ANSWER 21 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:119243 CAPLUS

DOCUMENT NUMBER: 68:119243

TITLE: Modification of the microdiffusion method for ammonia determination

AUTHOR(S): Lyubimov, V. I.; L'vov, N. P.; Kirsteine, B.

CORPORATE SOURCE: A. N. Bakh Inst. Biochem., Moscow, USSR

SOURCE: Prikladnaya Biokhimiya i Mikrobiologiya (1968), 4(1), 120-1

CODEN: PBMIK; ISSN: 0555-1099

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Transfer a 1-ml. sample to a glass vial (18-20 ml. capacity). Add 1 ml. saturated  $\text{K}_2\text{CO}_3$  solution. Cover the vial immediately with a stopper with glass rod, whose ground surface (2 cm. long) was moistened with 0.2 ml. of N  $\text{H}_2\text{SO}_4$ . Diffuse  $\text{NH}_3$  for 1 hr. at  $37^\circ$  by rotating (100 rpm.). Transfer the sample on the glass rod into another vessel containing 5 ml. doubly-distilled  $\text{H}_2\text{O}$  and 0.5 ml. of Nessler reagent. After 30 min. measure the absorbance at 413  $\mu$ . Use as standard a solution of  $(\text{NH}_4)_2\text{SO}_4$ . Prepare Nessler reagent by dissolving 34.9 g. KI in redistd.  $\text{H}_2\text{O}$ , and adding 45.5 g.  $\text{HgI}_2$ . Sep. dissolve 112 g. KOH in 150 ml. of redistd.  $\text{H}_2\text{O}$ . Combine both solns., and dilute to 1 l. with redistd.  $\text{H}_2\text{O}$ . Leave the solution overnight in the cold. Filter off the precipitated deposit on glass filter Number 3. The method

permits

determination of 2-50  $\gamma$  of  $\text{NH}_3$  with an error  $\pm 0.5 \gamma$ , in the presence of amides.

L5 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1967:440961 CAPLUS

DOCUMENT NUMBER: 67:40961

TITLE: Avidin assay: a new procedure for tissue fractions

AUTHOR(S): O'Malley, Bert W.; O'malley, Bert W.

CORPORATE SOURCE: Natl. Cancer Inst., Natl. Inst. of Health, Bethesda, MD, USA

SOURCE: Biochimica et Biophysica Acta, Protein Structure (1967), 140(1), 174-6

CODEN: BBPTBH; ISSN: 0005-2795

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A standard curve is constructed at several avidin (I) concns. for each assay. Reagents and I samples are diluted with 0.2M  $(\text{NH}_4)_2\text{CO}_3$ . The reaction mixture is D-biotin-carboxyl- $^{14}\text{C}$  plus standard or unknown in a final volume of 0.6 ml. After 10 min. at  $23^\circ$ , 1 ml.  $(\text{NH}_4)_2\text{CO}_3$  containing 10 mg. bentonite is added. After 5 min., the suspension is filtered with suction on a Millipore filter, and the residue is washed once. Unbound biotin passes through the filter. The filter containing the bentonite-I-biotin- $^{14}\text{C}$  is dissolved in a counting vial in 10 ml.



Bray's solution, leaving a bentonite sediment. Radioactivity is measured in an appropriate liquid scintillation spectrometer. Measurement of the electrophoretic mobility of the biotin-binding activity of chick oviduct supernatant fractions by acrylamide-gel electrophoresis revealed that the mobility of the biotin-binding activity was similar to that of authentic I. Also, comparison of the radioactivity bound by electrophoresis and by a standard assay showed that all the oviduct biotin-binding activity had the mobility of I, so that there could have been no other binding protein in the supernatant fraction.

L5 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:461952 CAPLUS  
DOCUMENT NUMBER: 63:61952  
ORIGINAL REFERENCE NO.: 63:11255c-e  
TITLE: Spectrophotometric estimation of alliin in Allium species  
AUTHOR(S): Gaiind, K. N.; Dar, R. N.; Popli, S. D.  
CORPORATE SOURCE: Univ. Panjab  
SOURCE: Indian Journal of Pharmacy (1965), 27(7), 199-200  
CODEN: IJPAAO; ISSN: 0019-5472  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB To determine alliin (I) (Cavallito and Bailey, CA 39, 3239) in Allium, inactivate the enzyme [Atal and Sethi (CA 56, 1524i) recommend 10 min. immersion of the whole bulbs in H<sub>2</sub>O at 100°; blanching with steam may be used], extract 10 g. of stabilized bulb with 40 ml. aqueous 70% EtOH by homogenizing in a Waring blender, filter the mixture, dilute the filtrate to 40 ml. with 70% EtOH, apply a 0.04 ml. aliquot of the extract, along with I standards (in 70% EtOH), on a sheet of Whatman Number 1 paper, chromatograph at 25° in BuOH-HOAc-H<sub>2</sub>O (40:10:50) solvent for 24 hrs. (R<sub>f</sub> of I = 0.29), spray the chromatograms with 0.25% ninhydrin solution, dry in air at 25° extract the I spots with MeOH condensate (above 8 ml. refluxing MeOH) for 5-6 hrs., cool, add 2 ml. 0.25% recrystd. alloxan (in MeOH), adjust the volume to 10 ml. with MeOH, evaporate the solns. to dryness on a 100° bath, cool, dissolve the viscous residue with 10 ml. H<sub>2</sub>O, and measure the absorbance at 520 mμ vs. a reagent blank Prepare the standard curve by using 40-200 γ I (in MeOH). Beer's law is obeyed for 5-20 γ I/ml. White garlic, red garlic, and Allium species contain 0.76, 0.57, and 0.07% I, resp. Four γ I can be detected.

L5 ANSWER 24 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:456283 CAPLUS  
DOCUMENT NUMBER: 63:56283  
ORIGINAL REFERENCE NO.: 63:10308f-g  
TITLE: Detection of phospholipids on paper chromatograms by neutron activation  
AUTHOR(S): Johnson, Peter; Weber, Evelyn J.; Carter, H. E.; Krober, M. S.  
CORPORATE SOURCE: Univ. of Illinois, Urbana  
SOURCE: Journal of Lipid Research (1965), 6(3), 425-7  
CODEN: JLPRAW; ISSN: 0022-2275  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB After chromatographic development for 18-24 hrs. in BuOH:AcOH:H<sub>2</sub>O (4:1:5, upper phase) on Whatman Number 1 filter paper, 1 5/8 in. strips containing corn phosphatides were cut out and placed in glass irradiation vials. The strips were then subjected to a thermal neutron flux of 2 X 10<sup>12</sup> neutrons/sec./cm.<sup>2</sup> at 250 kw. for 7 hrs., and allowed to decay for 48 hrs. The <sup>32</sup>P induced in phospholipid spots was then determined with a scanner; pretreating the paper with HCHO reduced the radioactive background.

ACCESSION NUMBER: 1964:468034 CAPLUS  
 DOCUMENT NUMBER: 61:68034  
 ORIGINAL REFERENCE NO.: 61:11753d-h,11754a-d  
 TITLE: Micro- and semimicroanalysis of mineral waters. I  
 AUTHOR(S): Ghimicescu, Gh.; Musteata-Ghimicescu, Camelia;  
 Dumbrava, Elvira  
 CORPORATE SOURCE: Inst. Med., Iasi, Rom.  
 SOURCE: Studia Universitatis Babes-Bolyai, Chemia (1963),  
 8(1), 281-44  
 CODEN: SUBCAB; ISSN: 1224-7154  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB The applicability of some micro- and semimicro methods for determining Na<sup>+</sup>, K<sup>+</sup>, F<sup>-</sup>, and I<sup>-</sup>, in mineral waters was investigated. For determining Na<sup>+</sup> the precipitation

as triple Mg-UO<sub>2</sub>-Na acetate was applied by the following method: dissolve UO<sub>2</sub>(AcO)<sub>2</sub> (10 g.) in distilled water (50 cc.) containing AcOH (2 cc.), and Mg(AcO)<sub>2</sub> (30 g.) in distilled water (50 cc.) containing AcO (1 cc.), using in both cases a water bath; mix. the solns. while hot, cool, and add 96° alc. (400 cc.) to render the solution 80% alc., leave several hrs., and keep in brown bottles. Add 5% NH<sub>4</sub>ClO<sub>4</sub> (5 cc. exactly) to an equal aliquot of mineral water (diluted to <0.2 mg. Na<sup>+</sup>/cc.) in centrifuge test tube, leave for 30 min., centrifuge, transfer small aliquot (0.2-1.0 cc.) to other centrifuge test tube, add Mg-UO<sub>2</sub> reagent (10 cc.), stir with glass rod washed with addnl. reagent (2 cc.), leave for 30 min., centrifuge, decant mother liquor, wash precipitate twice with 96° alc. saturated with triple salt (3 cc. each), centrifuge and decant each time, dissolve precipitate in distilled water (4-5 cc.) leaving the insol. copptd. UO<sub>2</sub>-phosphate, stir with glass rod washed with (1 cc.) water, centrifuge, decant clear solution into calibrated flask (50 cc.), repeat the digestion 3 times, then complete with water, homogenize, take aliquot (10 cc.) to identical flask, add AcOH (0.5 cc.), 20% K<sub>4</sub>Fe(CN)<sub>6</sub> (1 cc.), complete with water, homogenize, and determine colorimetrically the UO<sub>2</sub> group; the sensitivity of the sample was 10 γ in 5 cc. sample, and the error was ≤ ± 1.5% in mineral waters containing 55-116 γ/5 cc.

For determining K<sup>+</sup>, the precipitation as Na-K-cobaltinitrite was applied by the following method: dissolve crystallized Co(NO<sub>3</sub>)<sub>2</sub> (20 g.) in distilled water (50 cc.) and add AcOH (1 cc.), dissolve NaNO<sub>2</sub> (120 g.) in distilled water (180 cc.), and add part of the 2nd solution (210 cc.) to the 1st, pass air by, means of vacuum pump through the solution until elimination of nitrous oxides produced, and keep in well stoppered bottles. To a sample of mineral water (5 cc.) freed of H<sub>2</sub>S by bubbling of H<sub>2</sub> (from a Kipp apparatus) in a centrifuge test tube, add an equal volume of 10% Na<sub>2</sub>CO<sub>3</sub>, homogenize, centrifuge (elimination of Ca and Mg), take aliquot (4 cc.) to other test tube, add AcOH (0.5 cc.) and reagent (5 cc.), agitate with glass rod washed with distilled water (1 cc.), leave for 45 min., centrifuge 30 min. at 1300-1500 revolutions/min., remove carefully most of the liquid by capillary coupled to suction pump leaving precipitate untouched (+0.3 cc. liquid), add along walls 1% Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> (3 cc.) from the precipitate up, centrifuge, remove solution with capillary and repeat washes 3 times taking care not to agitate the precipitate, add 5% Na<sub>3</sub>PO<sub>4</sub> (3 cc.) to the precipitate,

agitate

strongly with glass rod washed with distilled water (1 cc.), heat several min. in boiling brine bath, centrifuge 5 min., transfer liquid containing NO<sub>2</sub> group to calibrated flask, (20 cc.), repeat digestion of Co-phosphate

precipitate

with 5% Na<sub>3</sub>PO<sub>4</sub> (3 cc.) 3 times, collect extracts and complete with water, take aliquot (5 cc.), add equal volume of 0.02N KMnO<sub>4</sub> and equal volume of 20% H<sub>2</sub>SO<sub>4</sub>, heat 5 min. in boiling brine bath, cool, add 10% KI (5 cc.), leave in dark for 3 min., and titrate with 0.01N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> in the presence of

starch. The sensitivity was 20  $\gamma$  in 5 cc. sample, the error being  $\pm 1.2\%$  for mineral water containing 55.6-145.9  $\gamma$  K+/5 cc. sample. For determining F-, the distillation of F2 at 135° after elimination of the halogens and titration of the distillate at pH 3.00-3.05 with Th(NO3)4 0.002N solution was applied. Free a large sample of mineral water (50-250 cc.) from H2S as above, evaporate in Pt dish (to 5 cc.), transfer quant. to calibrated flask (50 cc.) by distilled water (5-15 cc.), add saturated Ag

lactate

solution for the complete precipitation of Cl-, complete with bidistd. water, filter, transfer aliquot (5-25 cc.) to distillation bulb of Parnas-Wagner steam distillation apparatus, wash the funnel used with bidistd.

water

(1-2 cc.) adding to same bulb, add to bulb concentrated HClO4 (4 cc.), regulate temperature of oil bath surrounding bulb to 135°, connect to steam generator and collect distillate from the condenser (200 cc.) (by a special procedure of valve manipulation the bulb is quickly emptied of residue and readied for the next determination), add 1 cc. buffer solution of pH 3.00-3.05 (9.45 g. CH2ClCOOH +

2.73

g. NaOH to 100 cc. distilled water), 1 cc. 0.05% Alizarin S, and titrate with an automatic microburet with 0.002N Th(NO3)4 to pink. The sensitivity was 10 $\gamma$  F-, and the limit of determination 10-100  $\gamma$  F-, and the error was  $\pm 1\%$  for 10-40  $\gamma$  sample. For determining of I-, the following procedure was adopted: take an aliquot (10-100 cc.) of H2S-free mineral water, make alkaline with 10% K2CO3 in the presence of phenolphthalein in Pt or porcelain dish, evaporate to dryness on brine bath, digest the residue 3 times with

absolute

EtOH (5 cc. each) and filter the extracts on quant. filter wetted with a little EtOH, collect filtrates into porcelain dish and evaporate to dryness, digest the residue purified of NaCl (in case of high NaCl contents, repeat the extns. with EtOH on the residue) with bidistd. water (18 cc. exactly) and add Br-AcOH reagent (2 cc. exactly of solution containing 0.5 cc. Br2 + 50 cc. AcOH +50 cc. distilled water), leave for 10-15 min., transfer to separation funnel, and CCl4 or perfectly colorless H2S-free CS2 (10 cc.) (prepared by agitating CS2 with 1% NaOH, twice with water, then with 5% AcOH, twice with water, then distill on sand bath in ground glass apparatus, keep in dark bottles), agitate strongly, sep. organic layer, repeat extraction with CCl4 or CS2 (5 cc. each) twice for quant. elimination of Br excess, filter the aqueous phase, take aliquot (10 cc.) of filtrate, add 5% (iodate-free) KI (2 cc.) and 1% starch (1 cc.), and titrate with 0.001N Na2S2O3 from a microburet; the sensitivity was 5  $\gamma$  per sample and the error was  $\pm 1\%$  in mineral water containing 10-40  $\gamma$  I- per sample. 36 references.

L5 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1964:441942 CAPLUS

DOCUMENT NUMBER: 61:41942

ORIGINAL REFERENCE NO.: 61:7331a-b

TITLE: Distillation apparatus for micro determination of nitrogen

AUTHOR(S): Dixon, S. E.; Shuel, R. W.

CORPORATE SOURCE: Ontario Agr. Coll., Guelph, Can.

SOURCE: Chemist-Analyst (1962), 51(3-4), 84

CODEN: CHANAA; ISSN: 0095-8484

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The distillation apparatus has proved satisfactory for the determination of the N content of

individual insect larvae or samples of similar N content (15-150  $\gamma$  of N). The technique is described. The apparatus consists of an outer chamber filled with glycerol; an inner distillation chamber, to which the Kjeldahl digest is transferred and which is closed by a silicone or rubber

plug; a condensing arm of 2-mm. tubing containing a bulb large enough to prevent the suck-back of the absorbing reagent; and a simple water jacket.

L5 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1963:481721 CAPLUS  
DOCUMENT NUMBER: 59:81721  
ORIGINAL REFERENCE NO.: 59:15123g-h  
TITLE: Application of radioisotopes to absorption in pharmaceutical closures  
AUTHOR(S): Clark, Glenn S.; Swartz, Howard A.  
CORPORATE SOURCE: Butler Univ., Indianapolis, IN  
SOURCE: Journal of Pharmaceutical Sciences (1963), 52(10), 999-1000  
CODEN: JPMSAE; ISSN: 0022-3549  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Vial closures and stoppers and sealing efficiency were tested with tritiated H<sub>2</sub>O. Residual activity in the stoppers and in the ferrules after storage at room temperature and at 50° was 0.56 and 0.025%, resp., at the maximum for time periods involved.

L5 ANSWER 28 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1963:36074 CAPLUS  
DOCUMENT NUMBER: 58:36074  
ORIGINAL REFERENCE NO.: 58:6179d-g  
TITLE: Rapid radiometric microgram determinations via precipitation or extraction  
AUTHOR(S): Spitzzy, H.; Dosudil, I.  
CORPORATE SOURCE: Univ. Graz, Austria  
SOURCE: Microchemical Journal, Symposium Series (1962), 2, 919-27  
CODEN: MJSSAZ; ISSN: 0544-0165  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB  $\gamma$  amts. of Na and K were determined by precipitation with labeled reagents and radiometry. Extraction methods with dithizone and Zn<sup>65</sup> were used to determine  $\gamma$  amts. of Cu, Ag, and Hg. Pptns. were carried out in a modified Pregl filter tube which was expanded on one side to provide a reaction bulb of 0.3-ml. capacity. The sample and reagents were introduced into the bulb through a slit opening on the opposite side and were stirred while the tube was horizontal. When precipitation was complete, the tube was turned to a vertical position, and the precipitate was spread on the filter disk with a jet of

washing solution. The supernatant was drawn off, and the precipitate was washed. The filter tube with precipitate was fixed in a definite position relative to a well-type scintillation counter. The measured activity was compared with a standard curve. This technique was suitable for determining 0.2-100  $\gamma$  K by

precipitation with Na hexanitritocobaltate labeled with Co<sup>60</sup> and for determining 0.3-100  $\gamma$  Na by precipitation with Zn uranyl acetate labeled with Zn<sup>65</sup>. Satisfactory results were obtained in the 1-12  $\gamma$  Na range when less than twice as much K as Na was present; 3 times as much K as Na could be tolerated in the 100  $\gamma$  Na range. For extns., aqueous solns. containing 0.5-30  $\gamma$  Cu, Ag, or Hg were extracted with a measured excess of dithizone. The extract was separated and transferred to a titration vessel which

contained a measured excess of Zn<sup>65</sup> standard solution in an acetate buffer. After the unused dithizone had combined with an equivalent part of standard min., the activity remaining in the aqueous solution was measured. In this

manner, the dithizone used by the unknown ion was determined by one radiometric measurement. Both methods require only 15-20 min. for 1 determination

L5 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1962:70431 CAPLUS

DOCUMENT NUMBER: 56:70431

ORIGINAL REFERENCE NO.: 56:13574h-i,13575a

TITLE: Investigation of deposited aerosol particles with a radioactive surface labeling technique

AUTHOR(S): Jech, C.

CORPORATE SOURCE: Czech. Acad. Sci., Prague

SOURCE: Staub (1962), 22(No. 2), 40-1

CODEN: STABAU; ISSN: 0375-989X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB By using a new radioactive tracer labeling technique, information about aerosol size and position, and also chemical constitution can be obtained for particles deposited on membrane or artificial fiber filters. The filter with the deposited aerosol is placed in a glass bulb which is first evacuated and then filled with radon or Kr85 at reduced pressure. Sudden application of a high electrostatic potential across the bulb shoots the radioactive mols. into the aerosol surface, although they pass through the filter. The aerosol properties can then be readily investigated with autoradiographic methods.

L5 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1959:121511 CAPLUS

DOCUMENT NUMBER: 53:121511

ORIGINAL REFERENCE NO.: 53:21679g-i,21680a-i,21681a-i,21682a-g

TITLE: Structure of piperidinohexose reductone

AUTHOR(S): Weygand, F.; Simon, H.; Bitterlich, W.; Hodge, J. E.; Fisher, B. E.

CORPORATE SOURCE: Tech. Univ., Berlin

SOURCE: Tetrahedron (1959), 6, 123-38

CODEN: TETRAB; ISSN: 0040-4020

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C.A. 48, 133a. The structure of the title compound (I), prepared according to Hodge and Rist (loc. cit.), was clarified by degradation reactions and the intermediate dihydroanhydropiperidinohexose reductone (II), obtained unequivocally from I, was synthesized from 4-chloro-1-methyl-1-cyclopenten-2-ol-3-one (III). I, C<sub>11</sub>H<sub>17</sub>NO<sub>3</sub>, reduced exactly 2 equivs. of iodine in AcOH and gave a pos. test according to Weygand and Csendes (C.A. 46, 3907g) with titanilic salts in C<sub>5</sub>H<sub>5</sub>N. I reduced Tillmans reagent, alkaline methylene blue, ammoniacal AgNO<sub>3</sub> and alkaline aqueous I buffered with NaOAc gave an intense Prussian blue color with acid aqueous FeCl<sub>3</sub>. I (4.23 g.) and 4.1 g. Me<sub>2</sub>SO<sub>4</sub> swirled with dropwise addition of 6 ml. 5N NaOH below 20° and the mixture kept 15 min. at 25°, the clear solution neutralized with dilute H<sub>2</sub>SO<sub>4</sub> and extracted with CHCl<sub>3</sub>, the extract evaporated, and the residue crystallized from C<sub>6</sub>H<sub>6</sub> and from

Me<sub>2</sub>CO

gave 3.5 g. I mono-O-Me ether (IV), C<sub>12</sub>H<sub>19</sub>NO<sub>3</sub>, m. 144°, consuming 2.5, 2.8, 3.0 and 3.1 moles NaIO<sub>4</sub> in 1, 22, 48, 72 hrs. on treatment with 4.6 moles NaIO<sub>4</sub> without evolution of HCHO, giving 1 mole AcOH/mole compound in Kuhn-Roth analysis for C-Me, a low pos. CHI<sub>3</sub> test, reducing Tillmans reagent after hydrolysis in hot 2N HCl, and absorbing 3.4 moles H in 0.1N HCl on hydrogenation with prerduced PtO<sub>2</sub> to give a solution consuming 3.3 moles NaIO<sub>4</sub> in 6 hrs. at 5° without production of HCHO, giving a red-purple color with FeCl<sub>3</sub>, λ 299 mμ (E<sub>1</sub>%1cm. 1530, in H<sub>2</sub>O and dilute alkali), λ 298 mμ (E<sub>1</sub>%1cm. 1435, in 0.1N HCl); picrate m. 147°. Remethylation of IV in Me<sub>2</sub>SO<sub>4</sub>-NaOH gave I di-O-Me ether (V), m. 58-9.5°. I (21.1 g.) stirred 30 min. in

water at 5° (N atmospheric) with simultaneous dropwise addition of 52 g. 50% aqueous NaOH and 50 g. Me<sub>2</sub>SO<sub>4</sub> and the clear solution kept 2 hrs. with warming

to

18°, the strongly stirred alkaline solution treated dropwise with 13 g. Me<sub>2</sub>SO<sub>4</sub> and kept 16 hrs. at 25°, extracted with CHCl<sub>3</sub> and the product taken up in 200 ml. C<sub>7</sub>H<sub>16</sub> at 85°, the cooled mixture filtered, and the product (22.2 g.) recrystd. (C<sub>7</sub>H<sub>16</sub>) gave 1 g. IV and pure V, giving a neutral aqueous solution not reducing Tillmans reagent or hot Fehling solution and producing a faint brownish purple color with FeCl<sub>3</sub>. The CHI<sub>3</sub> test was neg. and hydrolysis in 2N H<sub>2</sub>SO<sub>4</sub> at 100° gave a solution rapidly reducing Tillmans reagent at 25°. I (2.11 g.) in 40 ml. Ac<sub>2</sub>O heated 15 min. at 65° and the solution kept 2 days at 0°, the crystalline product washed with Et<sub>2</sub>O, and dried in vacuo at 56° gave 0.88 g. material, m. 170°. The filtrate distilled at 50° in vacuo and the residue suspended in Et<sub>2</sub>O, kept at 0°, and the material (1.62 g., m. 168-9°) isolated gave a total of 2.50 g. I monoacetate (VI), m. 170° (anhydrous EtOAc), also produced by acetylation of I in C<sub>5</sub>H<sub>5</sub>N with excess Ac<sub>2</sub>O at 25°. VI in 3N AcOH did not reduce Tillmans reagent at 25° but after heating the solution to 100° and cooling to 25° the reduction was instantaneous. Neutralization of the heated AcOH solution with NaOH gave I. VI in absolute alc. gave a stable blue color with 1 drop of alc. FeCl<sub>3</sub> but did not reduce Tillmans reagent. VI in absolute MeOH and acetate-buffered AcOH (pH 4.6) gave no deep color with FeCl<sub>3</sub> in contrast to the behavior of I. VI in MeOH reduced Tillmans reagent and faded the yellow color of FeCl<sub>3</sub>. I (8.5 g.) in 25 ml. absolute MeOH (N

atmospheric)

treated with 20 ml. 19% HCl in MeOH, the yellow solution kept at 0°, and diluted with Et<sub>2</sub>O gave 7.4 g. I.HCl, m. 120-1°. I.HCl (5 g.) and 5 g. NaOAc.3H<sub>2</sub>O treated with 25 ml. water (N atmospheric) and the mixture kept

at

25°, filtered, and the product washed (H<sub>2</sub>O and Me<sub>2</sub>CO) and dried yielded 98% I. I (5.30 g.) in 25 ml. BuOH (N atmospheric) treated with 50 ml. cold 21% HCl in BuOH and the solution warmed to 20° in 15 min., filtered and the filtrate diluted with Et<sub>2</sub>O, stored at 0° and filtered, the crystalline product (5.65 g., m. 167°) stirred 10 min. in 40 ml. HCl-BuOH at 35° and diluted with Et<sub>2</sub>O, the cooled mixture stored, and filtered yielded 4.6 g. I chloride HCl salt (VII), m. 168° (decomposition), unstable in moist air and in a desiccator over CaCl<sub>2</sub>, reducing Tillmans reagent in aqueous solution and giving a blue-green color with FeCl<sub>3</sub> when buffered with NaOAc. VII (10.0 g.) kept several hrs. in 50 ml. MeOH at 25° and the filtered solution concentrated in vacuo, the product washed (Et<sub>2</sub>O), and dried in vacuo over CaCl<sub>2</sub> 48 hrs. gave 93% IV.HCl (VIII), m. 144° (decomposition) (MeOH-HCl-Et<sub>2</sub>O). VII kept 1 hr. in absolute alc. at 25° yielded 60% corresponding I mono-O-Et ether-HCl, m. 142-3° (decomposition). VIII (6.0 g.) in 15 ml. cold water (N atmospheric) stirred with immediate addition of 4.5 ml. 5N NaOH,

the

clear orange-red solution (pH 4) stirred, and the product (3.7 g.) twice recrystd. (C<sub>6</sub>H<sub>6</sub>-petr. ether) gave IV with reductone properties (VIIIa), m. 153-4.5°, more soluble in organic solvents and less soluble in water than IV, the neutral aqueous solution reducing Tillmans reagent very slowly but, on adding a drop of AcOH to the blue solution with change to red, the red color discharging immediately, consuming 2 equivs. iodine in dilute AcOH, and giving a Prussian blue color in alc. with FeCl<sub>3</sub>. VIIIa (0.5 g.) in 3 ml. BuOH heated with 3 ml. 21% HCl in BuOH and the mixture heated, the solution cooled and filtered, the yellow HCl salt (0.35 g., m. 173-5°) stirred in 3M NaOAc, and filtered gave anhydropiperidinohexose reductone (IX), m. 196-7° (decomposition), giving only a trace of AcOH in Kuhn-Roth C-Me determination I (320 g.) in 250 ml. BuOH stirred (N

atmospheric) with

gradual addition of 1490 g. cold 10% HCl in BuOH and the mixture heated with

steam to 55° in 8 min., heated 12 min. at 60-5° and 15 min. at 66-70° and cooled rapidly to 22°, filtered, and the filter cake washed (BuOH and Et<sub>2</sub>O) and dried (in vacuo, CaCl<sub>2</sub>) gave 285 g. product, crystallized (MeOH-HCl-Et<sub>2</sub>O) to give IX.HCl, m. 175-82° (decomposition), stable on standing 3 years in a screw-capped vial, in contrast to VII; picrate m. 166°, also stable. IX.HCl (275 g.) in 1 l. water (N atmospheric) at 25° stirred with rapid sub-surface addition of filtered aqueous NaOAc (204 g. NaOAc.3H<sub>2</sub>O) and the

solution

acidified to pH 4.5, stirred rapidly 30 min. and filtered, the residue washed 5 times with 200 ml. water, and dried (in vacuo, CaCl<sub>2</sub>) to constant weight gave 226 g. material, m. 188-91° (decomposition), taken up in 1.75 l. absolute alc. and filtered (steam-heated funnel), the cooled solution

filtered

and the crystallization (207 g.) repeated (2.25 l. alc.) to give 172 g. IX, C<sub>11</sub>H<sub>15</sub>NO<sub>2</sub>, m. 197-8° (decomposition) (Me<sub>2</sub>CO),  $\lambda$  360, 230 (E<sub>1</sub>%1cm. 1250, 684, MeOH), 358, 228 (isooctane), 353, 228 (water), 330 (E<sub>1</sub>%1cm. 1310), 400, 400 m $\mu$  (E<sub>1</sub>%1cm. 342, 0.1N NaOH),  $\nu$  1660, 1525-75 cm.<sup>-1</sup>, no evident band in the true CO range, yielding only 0.06 mole AcOH in Kuhn-Roth oxidation and reducing Tillmans reagent and iodine in neutral aqueous and dilute AcOH solns., giving pos. enediol reaction with TiCl<sub>3</sub> in MeOH and in C<sub>5</sub>H<sub>5</sub>N and a deep blue color (turning brown) with FeCl<sub>3</sub>. IX (4.83 g.) stirred (N atmospheric) with 12.6 g. freshly distilled Me<sub>2</sub>SO<sub>4</sub> at 5° and treated dropwise below 30° with 16 ml. 6N NaOH, the mixture stirred 1 hr. at 25° and extracted repeatedly with CHCl<sub>3</sub>, the washed (H<sub>2</sub>O) and dried (Na<sub>2</sub>SO<sub>4</sub>) extract evaporated, and the residue treated with water gave the hydrate (X) (9.4 g., m. 66-8.5°), dried several days at 25° in vacuo (P<sub>2</sub>O<sub>5</sub>) to give IX mono-O-Me ether (XI), m. 58-60°, yielding only 0.13 mole AcOH on Kuhn-Roth oxidation and unreactive in aqueous solution to Tillmans reagent and FeCl<sub>3</sub>. IV (2.25 g.) in 15 ml. 19% HCl in BuOH kept overnight and the crystalline product washed (BuOH and Et<sub>2</sub>O) gave 0.5 g. IV.HCl, m. 148-9° (decomposition), giving a strongly acidic aqueous solution precipitating AgCl from AgNO<sub>3</sub>, inactive to

Tillmans

reagent but giving a purple color with FeCl<sub>3</sub>. Treatment with aqueous NaOAc gave IV. IV (2.25 g.) in 25 ml. BuOH and 25 ml. 19% HCl in BuOH refluxed 1 hr. and the clear solution concentrated in vacuo, the concentrate

diluted

with Et<sub>2</sub>O and the filtered product dried, the salt (2.05 g.) crystallized (alc.-Et<sub>2</sub>O-HCl) and the HCl salt (1.40 g., m. 140-2°) stirred with 10 ml. 3M NaOAc, the precipitate air-dried, and the compound (1.25 g.)

recrystd.

(H<sub>2</sub>O) gave X, C<sub>12</sub>H<sub>17</sub>NO<sub>2</sub>.5H<sub>2</sub>O, m. 69.0-9.5°, desiccated readily to give XI and regenerated by addition of a few drops of water, also formed from V. IX (1.93 g.) in 25 ml. Ac<sub>2</sub>O at 25° treated with 2 ml. dry C<sub>5</sub>H<sub>5</sub>N and the mixture kept 2 days at 0°, the solvent distilled in vacuo with several addns. of anhydrous EtOAc, and the sirupy residue diluted with Et<sub>2</sub>O gave 1.35 g. IX monoacetate, m. 83° (petr. ether), reducing Tillmans reagent in MeOH and in dilute AcOH and giving a blue color (rapidly turning orange-brown) with FeCl<sub>3</sub>. Kuhn-Roth oxidation gave 0.96 mole AcOH from the O-Ac radical, indicating the absence of a C-Me group on the 5-carbon ring. IX (19.3 g.) in 135 ml. absolute alc. hydrogenated 1 hr. at 25°/1300 lb. sq. in. with 3 g. Raney Ni in a 300 ml. stainless steel bomb and the filtrate concentrated (N atmospheric) in

vacuo,

the sirup diluted with Et<sub>2</sub>O, and the filtered product washed (Et<sub>2</sub>O) yielded 93% II, m. 154-5° (absolute EtOAc), also produced in 75% yield by hydrogenation in AcOH or absolute alc. with prereduced PtO<sub>2</sub> at 25°/45 lb. sq. in., giving virtually duplicate ultraviolet absorption curves to those recorded for I,  $\lambda$  298, 305, 315, 345 m $\mu$  (E<sub>1</sub>%1cm. 1277, 778, 1516, 335 (rapidly lost) in 0.1N HCl, water, MeOH, 0.1N NaOH, resp.),  $\nu$  1667, 1520-80 cm.<sup>-1</sup>, reducing 2 equivs. Tillmans reagent in

AcOH and giving 0.5 mole AcOH on Kuhn-Roth oxidation, producing a blue color with  $\text{FeCl}_3$  in alc. or in acetate-buffered dilute AcOH, and giving a pos. test with  $\text{TiCl}_3$  in  $\text{C}_5\text{H}_5\text{N}$  and in MeOH; monoacetate m.  $92^\circ$  ( $\text{C}_7\text{H}_{16}$ ). I (4.23 g.) added with stirring to 3.00 g.  $\text{PhNHNH}_2 \cdot \text{HCl}$  in 250 ml. water at  $80^\circ$  (N atmospheric) and the mixture kept 2 hrs. at  $80-3^\circ$ , filtered, and the washed (hot  $\text{H}_2\text{O}$ ) product (4.20 g.) twice recrystd. (100 vols.  $\text{Me}_2\text{CO}$ ) gave a phenylhydrazone or phenylazo derivative (XII),  $\text{C}_{12}\text{H}_{12}\text{N}_2\text{O}_2$ , m.  $204-5^\circ$  (deep yellow needles or deep red prisms from alc.), both forms giving the same Rf in BuOH-AcOH- $\text{H}_2\text{O}$ , containing 1 C-Me group and giving 80%  $\text{PhNH}_2$  on treatment with  $\text{Na}_2\text{S}_2\text{O}_4$  in dilute alc. at  $85^\circ$ . The  $\text{CHI}_3$  test was neg. XII was also produced in 76% yield by similar treatment of IX and in almost quant. yields by the reaction of IX with  $\text{PhNHNH}_2$  in 3N AcOH. Under the latter conditions I reacted very slowly and gave only small yields of red XII. XII acetylated with a 4-molar excess of  $\text{Ac}_2\text{O}$  in  $\text{C}_5\text{H}_5\text{N}$  at  $25^\circ$  gave 2 mono-O-Ac derivs., m.  $120-1^\circ$  (alc.) and  $177^\circ$  ( $\text{EtOAc}$ ). I (4.22 g.) in 100 ml. 2N  $\text{H}_2\text{SO}_4$  hydrogenated 20 hrs. at  $20^\circ$  with 200 mg. prerduced  $\text{PtO}_2$  and the filtered solution stirred with aqueous  $\text{BaCO}_3$ , the alkaline solution treated with dilute NaOH and extracted with  $\text{Et}_2\text{O}$ , the extract evaporated, and the product sublimed gave extremely volatile 1-methyl-4-piperidino-2(or 3)-cyclopentanol (XIII),  $\text{C}_{11}\text{H}_{21}\text{NO}$ , m.  $71^\circ$ , containing 1 active H. XIII (1 g.) refluxed with a 10-fold excess of MeI in 20 ml.  $\text{MeNO}_2$  and the mixture evaporated gave the methiodide, m.  $142^\circ$ , transformed (1 g.) to the free base with  $\text{Ag}_2\text{O}$  and the solution freeze-dried, the residue heated at  $150^\circ$ , and distilled to give N-methylpiperidine; picrate m.  $148^\circ$ . I (4.22 g.) in 110 ml. N HCl warmed to  $70^\circ$  with 4.30 g.  $\text{PhNHNH}_2$  and the crystalline orange leaflets heated 10 min. at  $100^\circ$  (water bath) gave 4.23 g. deep red needles of XII, paper chromatographed in 4:1:1 BuOH-AcOH- $\text{H}_2\text{O}$  to give the orange form, m.  $189^\circ$ , Rf 0.76 (fluorescent in ultraviolet light), and yellow or orange crystals, m.  $194^\circ$ , Rf 0.83 (absorbing ultraviolet light), mixed m.p.  $194^\circ$ . XII (8 g.) in 150 ml. 80% alc. hydrogenated 5 days with prerduced  $\text{PtO}_2$  (150 mg.) with shaking and the filtered solution evaporated (N atmospheric), the residue taken up in hot water, and the filtrate evaporated (N atmospheric) gave 2-3 g. crystalline reductone (XIV),  $\text{C}_6\text{H}_9\text{NO}_2$ , m.  $200-2^\circ$  ( $\text{Me}_2\text{CO}$ ), paper chromatographed in 4:1:1 BuOH-AcOH- $\text{H}_2\text{O}$  to show the main product at Rf 0.67 and a small amount of enediol active product at Rf 0.81. XIV, m.  $202-3^\circ$ , was obtained in 75% yields by repeating the hydrogenation 3 hrs. at  $60^\circ$  and twice recrystg. the product from 125 vols.  $\text{Me}_2\text{CO}$ . XIV reduced 2 equivs. iodine in dilute AcOH and gave Prussian blue color with alc.  $\text{FeCl}_3$ . XII (4 g.) taken up in 150 ml. boiling alc. and the mixture hydrogenated at  $20^\circ$  with 100 mg.  $\text{PtO}_2$ , the vessel evacuated and filled with N, the mixture decanted (N atmospheric), and the product filtered off gave XII dihydro derivative,  $\text{C}_{12}\text{H}_{14}\text{N}_2\text{O}_2$ . XIV (127 mg.) in 50 ml. hot water treated dropwise with 4 millimoles 3%  $\text{H}_2\text{O}_2$  and the mixture kept 4 hrs. at  $40-50^\circ$ , the mixture evaporated and the residue extracted with  $\text{Me}_2\text{CO}$ , the insol. residue dried, and sublimed at 1 mm. gave a monoammonium salt,  $\text{C}_5\text{H}_{11}\text{NO}_4$ , taken up in dilute HCl and the solution distilled, the residue extracted with anhydrous  $\text{Me}_2\text{CO}$ , and the product sublimed to give authentic  $\text{HO}_2\text{CCHMeCH}_2\text{CO}_2\text{H}$  (XV), m.  $112^\circ$ . II (1.3 millimoles) in hot water treated with 0.6 ml. 30%  $\text{H}_2\text{O}_2$  and the mixture kept 10 min. at  $100^\circ$  with emission of gas, the yellow solution evaporated in vacuo and the residue taken up in dilute HCl, the acid solution evaporated in vacuo and the residue taken up in  $\text{Me}_2\text{CO}$ , filtered from  $\text{C}_5\text{H}_5\text{N} \cdot \text{HCl}$ , and the filtrate evaporated gave XV. I (10 g.) in 300 ml. water treated at  $90^\circ$  with 23 ml. 30%  $\text{H}_2\text{O}_2$  and the mixture kept 30 min. at  $100^\circ$  with loss of  $\text{CO}_2$ ,



the cooled solution treated with 30 g.  $\text{Pb}(\text{OAc})_2$  and the mixture filtered after 24 hrs., the dried precipitate pulverized and suspended in water, saturated 2 hrs. with  $\text{H}_2\text{S}$  and the filtered solution evaporated in vacuo, the residue taken up in 50 ml. water and the solution made significantly alkaline with dicyclohexylamine, the mixture washed with petr. ether and evaporated, the sirup kept 2 days and the dried crystalline product (8.9 g.) extracted with 20 ml. boiling  $\text{C}_6\text{H}_6$  and 5 times with 50 ml.  $\text{C}_6\text{H}_6$ , the crystals from the 2nd and 3rd extns. recrystd. ( $\text{C}_6\text{H}_6$ ) and the dicyclohexylamine salt, m.  $137-40^\circ$ , taken up in water, and the solution shaken with a cation-exchange resin (acid form) gave the free acid, cooled in  $\text{Et}_2\text{O}$  to  $-78^\circ$ , triturated, filtered, and the product twice recrystd. (2:1  $\text{EtOAc}$ -petr. ether) to yield pure citramalic acid, m.  $117^\circ$ . III (4.47 g.) in 30 ml.  $\text{C}_6\text{H}_6$  added dropwise to 40 ml.  $\text{C}_5\text{H}_{11}\text{N}$  at  $-20^\circ$  (ice- $\text{NaCl}$ ) and the mixture kept 2 hrs. at room temperature, the filtered solution evaporated (N atmospheric) in vacuo at  $35-40^\circ$  and the residue stirred with water, filtered, and the residue crystallized (2:3  $\text{C}_6\text{H}_6$ -ligroine) gave 75% II, m.  $153.5^\circ$ , identical with the material from I by mixed m.p. determination, infrared spectrum, and Debye-Scherrer photograph comparisons. II was similarly obtained from 4-chloro-1-methyl-2,3-dioxopentane (Hesse and Breig, C.A. 49, 13907b) and  $\text{C}_5\text{H}_{11}\text{N}$ .

L5 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1959:44100 CAPLUS  
 DOCUMENT NUMBER: 53:44100  
 ORIGINAL REFERENCE NO.: 53:7860i,7861a-c  
 TITLE: Activation analysis by short-life nuclides. I. Determination of hafnium in zirconium by hafnium-179m  
 AUTHOR(S): Nakai, Toshio; Yajima, Seishi; Fujii, Isao; Okada, Minoru  
 CORPORATE SOURCE: Japan At. Energy Research Inst., Ibaraki Prefecture  
 SOURCE: Nippon Kagaku Zasshi (1959), 80, 49-52  
 CODEN: NPKZAZ; ISSN: 0369-5387  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB Determination is based on the reaction  $\text{Hf}^{178}(\text{n},\gamma)\text{Hf}^{179\text{m}}$ . A zirconia sample (20-100 mg.), reagent blank solution for preparation of standard Hf solution, and a strip of filter paper were sealed in a polyethylene vial, and irradiated in the JRR-1 reactor (water boiler type) at a neutron flux of  $2 + 10^{11}$  n/sq. cm./sec. for 60 sec. After 10 sec.-cooling, a peak of  $\gamma$ -ray of  $\text{Hf}^{179\text{m}}$  (half-life 19 sec.) at 0.215 m.e.v. was measured for 10 sec. by a pulse height analyzer.  $\text{HfO}_2$  (5-20  $\gamma$ ) was determined with a relative error of  $\pm 2\%$ . Several samples of reactor-grade zirconia were analyzed for Hf (31-142 p.p.m. Hf with respect to Zr metal) by this method. Possible interference of the reaction  $\text{Zr}^{90}(\text{n},\text{n}')\text{Zr}^{90\text{m}}$  with the determination of Hf was eliminated by cooling the irradiated sample for several sec. Addition of a same amount of  $\text{H}_2\text{O}$  to the sample prior to analysis compensated for the effect of the reaction  $\text{O}^{18}(\text{n},\gamma)\text{O}^{19}$ .

L5 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1959:27870 CAPLUS  
 DOCUMENT NUMBER: 53:27870  
 ORIGINAL REFERENCE NO.: 53:5016g-i  
 TITLE: Rapid determination of tin, copper, lead, iron, and nickel in red brass and bronzes  
 AUTHOR(S): Wiedmann, H.  
 SOURCE: Metall (Berlin, 1914-34) (1958), 12, 1005-7  
 CODEN: METSA5; ISSN: 0375-9377

DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Determination of Sn: dissolve 1 g. of turnings in 20 ml. of HCl and 5 ml. of 30%

H<sub>2</sub>O<sub>2</sub>. Add 20 ml. of 4% HgCl<sub>2</sub> and 10 ml. of 30% HPO<sub>2</sub> and digest until the solution is clear. After cooling in CO<sub>2</sub>, reduce with a few pieces of Marmor, add 25 ml. of 25% Al thiocyanate, 10 ml. of 10% KI solution, and starch and titrate with 0.1N iodine to a blue color. Determination of Cu: dissolve 0.5

g. of

sample in 40% tartaric acid and 15 ml. of 1:1 HNO<sub>3</sub>. Add 1 ml. of 5% sulfamic acid and digest until NO<sub>2</sub> fumes are gone. Cool, add 25 ml. water, 1 g. urea, 10 ml. of 30% Na pyrophosphate, and 25 ml. of a thiocyanate solution (50 g. KSCN, 6 g. KI, in 1 l. water) and titrate with standard Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> with a starch indicator. Determination of Pb: dissolve 1 g. of the sample in 5 ml. 10% NaCl and 25 ml. 1:1 HNO<sub>3</sub>. Cool, add sufficient Pb(NO<sub>3</sub>)<sub>2</sub> solution to correspond to 0.1 g. of Pb. Place in a 100-ml. volumetric flask, fill to mark with water, and shake well. This is a stock solution. Take 20 ml. of this solution and add, in order, 15 ml. water, 10 ml. 10% tartaric acid, 5 ml. of a triethanolamine solution (30 ml. in 100 ml. water), 20 ml. 1:1 NH<sub>4</sub>OH, 10 ml. of a buffer solution (54 g. NH<sub>4</sub>Cl and 350 ml. concentrated NH<sub>3</sub> in 1 l. water), 30 ml. water, 10 ml. 10% KCN, and

5

ml. of a Complexon III solution (18.61 g. dissolved in 500 ml. water and 50 ml. of this solution diluted to 1 l.). Titrate the mixture from wine red to

pure

blue. Determination of Fe: place 5 ml. of the stock solution described above

in a

100-ml. volumetric flask and add, in order, 20 ml. of 10% sulfosalicylic acid, 20 ml. of 40% NH<sub>4</sub>OAc, and 10 ml. 20% Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>. Dilute to the mark and measure the extinction with a Elko II, filter S47E, incandescent lamp, 2000 cm. bulb. Determination of Ni: to 5 ml. of the stock solution, add 4 ml. of 1:8 NH<sub>4</sub>OH and, in order, 5 ml. 10% Na tartrate, 7 ml. of a Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>-NH<sub>4</sub>OAc solution (100 g. NH<sub>4</sub>OAc in 250 ml. water, treated with NH<sub>3</sub> to pH 9.2, add 200 g. Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> and dilute to 500 ml.), 5 ml. 20% hydroxylamine, and 2 ml. 0.5% dimethylglyoxime. The Ni is precipitated and then shaken with

25

ml. CHCl<sub>3</sub> for 30 sec. The greater part of the CHCl<sub>3</sub> solution is run into a dry flask containing 2 g. of anhydrous Na<sub>2</sub>SO<sub>4</sub>. After a short drying time the extinction is measured with an Elko II, incandescent lamp, filter S38, 1000 cm. bulb against CHCl<sub>3</sub>.

L5 ANSWER 33 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1958:90621 CAPLUS

DOCUMENT NUMBER: 52:90621

ORIGINAL REFERENCE NO.: 52:15937g-i,15938a

TITLE: Determination of saponin in granulated sugar: method of H. G. Walker adapted to routine control

AUTHOR(S): West, R. R.; Gaddie, R. S.

SOURCE: Proceedings of the American Society of Sugar Beet (1957), Volume Date 1956-1957, 9, 146-52  
From: Sugar Ind. Abstr. 19, Abstr. No. 873(1957)  
CODEN: PASSA5; ISSN: 0097-2851

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A modification of Walker's method (preceding abstract) is described and test results are tabulated. Dissolve 50 g. of the sugar to be tested in a 500-ml. flask with 150 ml. of water at room temperature, add concentrated HCl to pH

1-1.4, and filter the mixture through a 60-ml. sintered-glass filter previously cleaned with 5 ml. of hot glacial AcOH and then with 30 ml. of water. After filtration rinse the flask with 15 ml. of dilute HCl (1 ml. of concentrated acid + 1 l. of water) and pass the rinsings through the filter,

which is then dried at 103-5° for 1 hr. After cooling the filter, any green spots indicate that the sugar was not washed out. Elute the filter disk on a special bronze apparatus (described and illustrated) with 5.2 ml. of hot glacial AcOH, which is sucked through the covered filter disk under slight suction into a 5-drachm glass vial. Stopper the vial immediately with a plastic stopper. Pipet 1 ml. aliquots into clean vials and pipet 1 ml. of saponin and 1-ml. of elution acid into 2 vials as blanks. From a Teflon-stoppered buret, add 7.0 ml. of the SbCl<sub>5</sub>-CHCl<sub>3</sub> reagent to each vial. After 10 min. determine the colorimetric absorption maximum at 535 mμ. Then calculate the saponin content from a graph of values for the saponin and acid blanks. The resulting calibration curve shifts slightly each day and must, therefore, be replotted daily.

L5 ANSWER 34 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1952:24571 CAPLUS

DOCUMENT NUMBER: 46:24571

ORIGINAL REFERENCE NO.: 46:4169f-h

TITLE: The influence of vulcanized rubber on the quality of distilled water

AUTHOR(S): Christiansen, Eivind

SOURCE: Meddelelser fra Norsk Farmaceutisk Selskap (1951), 13, 121-30, 135-53

CODEN: MNFSAW; ISSN: 0029-1927

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The effect of a number of rubber samples, including various qualities of rubber stoppers, vial caps, catheters, and rubber tubing, on distilled water was investigated. The following criteria were used for judging the water after contact with the rubber samples: color, odor, taste, presence of NH<sub>3</sub>, change in pH, change in specific conductance, color reaction with dithizone, and presence of pyrogens. The term "Dithizone number" (I) was coined, designating the number of days of contact with the rubber sample before the water caused the dithizone reagent (5 mg. dithizone in 100 ml. CCl<sub>4</sub>) to change from green to pink. There was found to be a relation between I and the pyrogenic effect. Rubber samples with low I imparted pyrogens to distilled water, whereas water in contact with rubber samples having a I of 10 or more were always pyrogen-free. A number of standards were suggested for rubber materials intended for medical or pharmaceutical use.

L5 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1951:10803 CAPLUS

DOCUMENT NUMBER: 45:10803

ORIGINAL REFERENCE NO.: 45:1903h-i, 1904a

TITLE: Photoelectric spot analysis of antimony and bismuth

AUTHOR(S): Sudo, Toshio; Hayase, Kitaro

CORPORATE SOURCE: Tokyo Univ.

SOURCE: Science (Washington, DC, United States) (1951), 113, 11-12

CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB To test for Sb<sup>3+</sup> a 5% solution of H<sub>3</sub>PO<sub>4</sub>.12MoO<sub>3</sub> is used and for Bi<sup>3+</sup> a solution prepared from 1 g. cinchonine, 2 g. KI, a few drops of HNO<sub>3</sub>, and water to make 100 ml. Immerse a piece of filter paper in the reagent, add 1 drop of the solution to be tested and in the test for Sb heat in a steam bath for 5 min. Place the filter paper showing a colored spot (blue for Sb and pink for Bi) between the light bulb and the photoelec. tube of a photometer and insert a screen having a round hole (12 mm. diameter) between the light bulb and the filter paper. Center the colored spot on the hole which causes a

part of the light to be absorbed by the colored spot. Record the microammeter reading when the light transmitted through the colored spot is less than that through the rest of the paper. Correct the error owing to varying thickness of the paper by a blank test on each paper used. From the reading, calculate the percent of Sb or Bi. Good results are cited for determining 0.18  $\gamma$  of Sb and from 0.30 to 9.4  $\gamma$  of Bi.

L5 ANSWER 36 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1948:17229 CAPLUS  
DOCUMENT NUMBER: 42:17229  
ORIGINAL REFERENCE NO.: 42:3697c-e  
TITLE: Quantitative volumetric analysis of carbon-bonded halogen with sodium naphthalene  
AUTHOR(S): Benton, F. L.; Hamill, W. H.  
CORPORATE SOURCE: Univ. Notre Dame, Notre Dame, IN  
SOURCE: Anal. Chem. (1948), 20, 269-70  
CODEN: ANCHAM; ISSN: 0003-2700  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Weigh out a liquid sample in a thin-walled, sealed glass bulb, transfer to a separatory funnel from which all air has been displaced by dry N, and add an excess of Na naphthalene reagent (Scott, Walker, and Hamsley, C.A. 31, 677.6). Stopper the funnel and shake to break the bulb, as shown by rise in temperature. Continue to shake for 2-3 min. Dilute to about 100 ml. after destroying excess reagent by small portions of water. Combine the aqueous solution and exts., make acidic with HNO<sub>3</sub>, and titrate potentiometrically with 0.1 N AgNO<sub>3</sub> solution

L5 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1947:25365 CAPLUS  
DOCUMENT NUMBER: 41:25365  
ORIGINAL REFERENCE NO.: 41:5057f-i  
TITLE: Some analytical methods applicable to furan and its derivatives  
AUTHOR(S): Angell, F. G.  
CORPORATE SOURCE: Imp. Chem. Industries Ltd., Billingham Co., Durham, UK  
SOURCE: Analyst (1947), 72, 178-84  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Existing methods were tested and improved when necessary. (1) Furfural can be determined by aqueous oximation at room temperature although the reaction is not quite stoichiometric. Treat 0.5-0.7 g. with 15 ml. of neutralized NH<sub>2</sub>OH.HCl + 15 ml. MeOH. After an hr. titrate the liberated HCl with 0.5 N NaOH to a methyl yellow end point; 1 HCl is liberated per mol. of furan. (2) Pyridine sulfate bromide is best for determining the unsatn. Saturation of both double bonds occurs with furan, sylvan, and furfuryl alc. But furfural, furoic acid, and furoic nitrile are hardly attacked. Prepare the reagent with 40 ml. glacial AcOH, 1 added to each of 3 dry, 500-ml. flasks. To one, add 16.3 ml. of pure pyridine, and to the second 10.9 ml. of concentrated H<sub>2</sub>SO<sub>4</sub>; when cold, mix these 2 solns. To the 3rd flask add 3.2 ml. of Br<sub>2</sub>. Then add the contents of the 3rd flask to the above mixture and dilute to 2 l. with glacial AcOH. To 50 ml. of reagent in a 200-ml. "iodine" flask, add from a sealed bulb a suitable quantity of the sample. Break the bulb, replace the stopper, and seal with 5 ml. of 10% KI solution. After an hr. in the dark, allow the KI solution to run into the flask and titrate with 0.1 N thiosulfate, with starch indicator added toward the end. Furoic acid and furfural are not attacked by the above reagent and it must be replaced by acidified KBr-KBrO<sub>3</sub>. (3) Acidified KBr-KBrO<sub>3</sub> is a brominating agent for furoic acid but gives only approx. correct results with furfural.

L5 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1947:23420 CAPLUS  
DOCUMENT NUMBER: 41:23420  
ORIGINAL REFERENCE NO.: 41:4681d-g  
TITLE: Apparatus in qualitative microanalysis. VI. Apparatus for the detection of gases  
AUTHOR(S): Belcher, R.  
CORPORATE SOURCE: Marischal Coll., Aberdeen, UK  
SOURCE: Metallurgia (1947), 35, 310  
CODEN: METLAI; ISSN: 0026-0835  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB cf. C.A. 39, 5133.4. For detection of gases on the micro-scale liberated by addition of suitable reagents, 2 forms of apparatus are generally used. One is the Feigl-Krumholz apparatus, in which the reagent is suspended on a knob attached to the bottom of the stopper; the other is Feigl's modification of the Rossler apparatus, in which the stopper consists of a hollow bulb open at each end, the reagent being suspended in the lower tip of the bulb. The latter type is preferred, since the reaction is more easily observed and is generally more rapid than in the Feigl-Krumholz apparatus. The Feigl-Rossler apparatus, however, has one defect. With a gas which is wholly or partially soluble in the aqueous phase, and where the solution must be heated to diminish the solubility, a slight temperature fluctuation may cause the reagent to be sucked into the apparatus. The apparatus is modified to overcome this by placing the drop of reagent at the bend between the 2 bulbs. During the heating the expanded air passes through the reagent, and if sudden cooling causes contraction the drop of reagent is drawn into the first bulb, until, reaching the wide portion, it collapses and falls back into the bend. Thus all risk of the reagent being sucked into the body of the apparatus is avoided.

L5 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1947:19482 CAPLUS  
DOCUMENT NUMBER: 41:19482  
ORIGINAL REFERENCE NO.: 41:3898a-d  
TITLE: Rapid turbidimetric determination of inorganic nitrogen in soil and plant extracts  
AUTHOR(S): Wolf, Benjamin  
CORPORATE SOURCE: G. L. F. Seabrook Farms, Bridgeton, NJ  
SOURCE: Anal. Chem. (1947), 19, 334-5  
CODEN: ANCHAM; ISSN: 0003-2700  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The soil and plant exts. were prepared as follows: Shake 12.5 g. of the soil with 0.5 teaspoon of carbon (activated Darco grade 0-97) and 25 cc. extracting solution (Morgan's universal) in a small flask for 1 min., then filter through Whatman #1 filter paper and use the filtrate for analysis. Agitate 5 g. of fresh minced plant tissue, or 1 g. dry ground tissue, 200 cc. of extracting solution, and 0.5 teaspoon of charcoal in a Waring Blendor for 5 min., then filter as above. For the determination, pipet 5 cc. of soil extract or 10 cc. of plant extract into 50-cc. Erlenmeyer flasks, and add 5 cc. extracting solution to soil exts. Add 2.25 cc. of water and 2.5 cc. of 15% NaOH to all of the flasks. Mix by rotation and add 0.25 cc. of a 20% titanous chloride solution; mix well, let stand 10 min. and filter through Whatman #1 filter paper in a funnel vial. Pipet into a series of photometer vials 10 cc. of modified Graves' reagent (dissolve 40

g. NaCl in about 750 cc. water in a 2000-cc. volumetric flask, add 3.5 g. HgCl<sub>2</sub>, dissolve, and fill up to the mark; preserve in a dark bottle) and 0.5 cc. of gum arabic solution (0.25% water solution by weight). Mix thoroughly with a flat-bottomed rod. Pipet rapidly 10 cc. of the above filtrate into the photometer vials, mixs, and let stand for 15 min. Readings are taken in the photometer, with a 425 mμ blue filter and by adjusting the null to give 100% transmission with a blank. Readings are compared with those of a series of standards (0-20 p.p.m. on a 10-cc. basis) treated as above. A standard curve or chart prepared from such readings is recommended. Graves' reagent was modified to give more accurate results.

L5 ANSWER 40 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1947:13141 CAPLUS  
DOCUMENT NUMBER: 41:13141  
ORIGINAL REFERENCE NO.: 41:2657d-g  
TITLE: Technique for determining chlorine in the atmosphere  
AUTHOR(S): Paiva, J. de Abreu  
CORPORATE SOURCE: Lab. de pesquisas toxicologicas, ministerio trabalho,  
Rio de Janeiro, Brazil  
SOURCE: Revista de Quimica e Farmacia (Rio de Janeiro) (1946),  
11(No. 11), 19-23  
CODEN: RQFAAK; ISSN: 0370-6907  
DOCUMENT TYPE: Journal  
LANGUAGE: French

AB The equipment generally used for collecting samples of air is not suitable for air containing Cl because of its solubility in H<sub>2</sub>O, reactivity with Hg, and for other reasons. The special apparatus designed to overcome this difficulty consists of a 1000-ml., heavy-wall Erlenmeyer flask of Pyrex glass with a ground-glass stopper having a central bore and connected by a 3-way stopcock with a glass bulb on top, holding 20 ml. A short piece of glass tubing is fused to the side opening of the stopcock. The stopcock is turned to the proper position for each of the following operations: To prepare the apparatus for sampling, it is evacuated to 0.2 mm. pressure. The bulb is then filled by suction with a 10% solution of KI containing a few drops of 2% starch indicator, and the stopcock is turned to close off the entire system. When the sample is to be taken the reagent in the bulb is run into the flask, and immediately after that the air is sucked into the flask. The system is closed again and the flask shaken. The stopper is removed, the liquid adhering to it and to the walls of the flask is washed down into the flask, and the liberated I is titrated with 0.01 N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> solution

L5 ANSWER 41 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1946:36733 CAPLUS  
DOCUMENT NUMBER: 40:36733  
ORIGINAL REFERENCE NO.: 40:7074g-i  
TITLE: Determination of carbon dioxide under field conditions  
by the volumetric method  
AUTHOR(S): Khrizman, I. A.  
SOURCE: Zavodskaya Laboratoriya (1946), 12, 250-1  
CODEN: ZVDLAU; ISSN: 0321-4265  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB A jar is closed with a rubber stopper through which a glass tube is passed whose lower part is blown out in the shape of a sealed cylindrical bulb. The upper part of this bulb has a side opening. The glass tube is connected to a 100-ml. buret filled with concentrated NaCl solution acidified with several drops of HCl and colored with an indicator. The other end of the buret is connected to a

regulating bulb by means of rubber tubing. Place 0.5 g. of the ore sample in the jar, fill the bulb with 10% HCl nearly to the level of the side opening, and stopper the jar. Determine the volume of CO<sub>2</sub> evolved by the difference in the levels of the liquid in the buret before and after the reaction.

L5 ANSWER 42 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1943:42424 CAPLUS

DOCUMENT NUMBER: 37:42424

ORIGINAL REFERENCE NO.: 37:6697a-c

TITLE: Anaerobic single-tube cultures

AUTHOR(S): Fuhrmann, Franz

SOURCE: Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 2, Naturwissenschaftliche: Allgemeine, Landwirtschaftliche und Technische Mikrobiologie (1943), 2, 105, 406-14

CODEN: ZBPIA9; ISSN: 0044-4057

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Three special tubes for single anaerobic cultures are described. The size of each is about 200 + 28 mm. Tube 1 has a bulb blown at the closed end into which 12 cc. of 20% Na<sub>2</sub>CO<sub>3</sub> or NaOH can be placed. Just above this is a side bulb in which 8 cc. of 20% pyrogallol solution is placed, a small side bulb near the open end of the tube in which is placed a little indicator solution for O (0.2% methylene blue in 0.5% dextrose); or filter paper soaked in the indicator solution. The inoculated culture tube is inserted into the special tube and the latter tightly stoppered. The assembly is then tilted so that the pyrogallol is mixed with the alkali. Tube 2 is similar except that a glass stopcock is ground into the open end so that the assembly can be evacuated. Tube 3 is like tube 2 except that the 2 lower bulbs are replaced by a ground-in stopcock, so that the air in the assembly can be replaced by some inert gas such as H or N. With tube 3, CO<sub>2</sub> or other gases formed during growth can be drawn into appropriate absorption tubes.

L5 ANSWER 43 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1939:39880 CAPLUS

DOCUMENT NUMBER: 33:39880

ORIGINAL REFERENCE NO.: 33:5628g-i, 5629a-d

TITLE: Determination of the NO content of coal-distillation gases

AUTHOR(S): Berkhoff, G.; van den Bout, M. F.

SOURCE: Het Gas (1939), 59, 53-9

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Different methods for NO determination Schuftan (cf. C. A. 26, 2849), Fulweiler (cf. C. A. 29, 5251.4), Shaw (cf. C. A. 30, 8573.3), Guyer and Weber (cf. C. A. 28, 880.4), etc., are discussed; the last method was chosen. The accuracy of the method was checked by adding known amts. of NO (diluted with 500 parts N<sub>2</sub>) to the gas. For each determination 10 l. gas was used, passed

at a rate of 20 l. per hr. Numerous expts. were undertaken to check the results for high and low NO concns. and curves are given for interpretation of the results. For NO contents between 0.01 and 2 p. p. m. the contact vessels are arranged KMnO<sub>4</sub>-Ilosvay reagent -KMnO<sub>4</sub>-Ilosvay and the NO content is determined separately for the 1st and 2nd Ilosvay vessel. A curve relating the 2 figures, determined experimentally, makes it possible to calculate the actual total NO content. Between 1 and 2 p. p. m. NO the first vessel absorbs 90 to 95% of the total NO present; at 0.1 p. p. m. this is reduced to 70%, at 0.02 p. p. m. to only 50%. Measurements on NO content of pure H<sub>2</sub> confirmed these data; in these tests

4 pairs of oxidation and absorption vessels were used. For the 20 l. per hr. rate the absorption is 95% for 2-17 p. p. m. NO. The accuracy of these detns. is estimated to be 10%. The Schuftan method on the same gases gave results approx. 10 times higher for the particular type of coke-oven gas used. This ratio depends on the diolefin content of the gas. The method finally used is: The Ilosvay reagent is colorless and prepared shortly before use from equal amts. of solution (I) 2 g. sulfanilic acid in a mixture of 100 cc. nitrite-free water and 100 cc. AcOH (300 cc. H<sub>2</sub>O is added) and solution (II) 0.6 g.  $\alpha$  naphthylamine, 400 cc. nitrite-free water and 100 cc. AcOH (the solution should not be heated). The KMnO<sub>4</sub> stock solution is 5% in nitrite-free water, boiled up and cooled. Shortly before use 5 cc. nitrite-free concentrated H<sub>2</sub>SO<sub>4</sub> is added to 100 cc. KMnO<sub>4</sub> solution. The standard NaNO<sub>2</sub> solution is prepared from 30 mg. pure NaNO<sub>2</sub>.

in

nitrite-free water to 1 l., kept in the dark; it is good for 3 months and is standardized at intervals. Nitrite-free water is prepared by redistn. over Ba(OH)<sub>2</sub>. The apparatus consists of 3 reaction vessels: a glass U tube, the up leg being of 17 mm. diameter, 440 mm. high with a 25-mm. radius bulb near the top, a porolith filter, 5 mm. thick type ff (Meissen) in a 14 mm. restriction near the base of the U tube for dispersion of the gas. The first and third vessels hold 15 cc. Ilosvay reagent; the second has 65 cc. acidified KMnO<sub>4</sub> solution. Auxiliaries are flow meter, gas meter, bypass, pressure regulator and manometer. The resistance of the apparatus is about 100 mm. Hg.; hence the gas is usually pumped through. At a 20 l. per hr. rate the Ilosvay tube froths abundantly. The Seebaum type vessels give equally good results. All joints are glass to glass. For the colorimetry of the solution obtained 20-mm. tubes, holding 50 cc. are used. All tubes, test as well as standard, are allowed to stand 10 min. before reading. 0.1 cc. standard NaNO<sub>2</sub> solution is equivalent to 0.21 + 10<sup>-2</sup> cc. NO in the gas.

L5 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1937:41032 CAPLUS

DOCUMENT NUMBER: 31:41032

ORIGINAL REFERENCE NO.: 31:5720i,5721a-b

TITLE: Determination of ethanol in by-products of the preparation of ethyl acetate from ethanol by the direct contact method

AUTHOR(S): Sapgir, I. N.; Frolova, R. A.

SOURCE: Sintet. Kauchuk (U. S. S. R.) (1936), (No. 11-12), 17-19

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The by-products contain ethanol in the presence of ethyl acetate (up to 82%), acetaldehyde (up to 83%), AcOH (up to 7%), acetal and water (up to 9%). Weigh 0.5 g. of sample into a thinwall ampoule, cool (ice and water) add 1 cc. of acetic anhydride (I) (in case the sample contained more than 30% of EtOH, use 1.5-2 cc. of I). Seal the ampoule, heat in boiling water for 1 hr., cool, put into a thick-wall 200-300-cc. flask with 50 cc. of water, close the flask with a glass stopper, break the ampoule and heat the flask at 50° for 30 min. to hydrolyze the excess of I. Then cool the flask, neutralize the excess of AcOH to a slight pink (phenolphthalein as indicator). Add a measured amount of 0.2 N KOH in excess heat, on a water bath to saponify the esters formed, then titrate back with 0.1 N acid solution the excess of KOH.

L5 ANSWER 45 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1936:38037 CAPLUS

DOCUMENT NUMBER: 30:38037

ORIGINAL REFERENCE NO.: 30:5031h-i,5032a

TITLE: Rapid determination of viscosity of unbleached viscose pulp



AUTHOR(S): Nikitin, N. I.; Nagrodskii, I. A.  
SOURCE: Bumazhnaya Promyshlennost (1935), 14(No. 12), 13-19  
CODEN: BUMPAK; ISSN: 0007-5817  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
AB Wash and sep. a sample from an uncooked portion in a sieve, and press out by hand to a nearly constant weight Determine the Bjorkman number in a sep. sample.  
Place the prepared sample (corresponding to 1 g. of oven-dry pulp) in a 100-cc. flask containing 70 cc. H<sub>2</sub>O (55°) and Ca(ClO)<sub>2</sub> in an amount corresponding to the Bjorkman number, bleach at 55° for 10 min. with shaking at 30-sec. intervals, filter off the pulp in a Buchner funnel, wash with 300 cc. H<sub>2</sub>O (30°), place in a glass tube and dry at 105° in a drying oven while passing warm air through the tube. Treat 0.7 g. of the dry pulp with 20% NH<sub>4</sub>OH for 3 min., dissolve it in 35 cc. of Schweitzer's reagent in a 60 cc. brown-colored flask at 20° for 10 min. Replace the glass stopper by a rubber stopper fitted with a viscometer pipet and a glass cock connected with an atomizer rubber bulb. Pump the solution into the pipet, open the cock and determine the viscosity. For the control of viscosity in the process of bleaching of viscose pulp, the bleaching operation in the determination is omitted.

L5 ANSWER 46 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1931:34839 CAPLUS  
DOCUMENT NUMBER: 25:34839  
ORIGINAL REFERENCE NO.: 25:3878i, 3879a-b  
TITLE: Storage and delivery apparatus for antimony chloride solutions and other corrosive reagents  
AUTHOR(S): Middleton, G.  
SOURCE: Analyst (1931), 56, 236-7  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The apparatus consists of a 600-cc. bottle of amber glass fitted with a stopper through which a glass tube passes. The tubing carries 2 chambers, one ending just below the stopper and connecting on the outside with a CaCl<sub>2</sub> tube (ground-glass connection) through which air can be forced by a rubber atomizer bulb. The inner part of the tubing serves for the passage of the solution from the bottle to the measuring device. This tubing reaches nearly to the bottom of the bottle and is bent upwards a little at the bottom, so as not to draw up any sediment, and is provided with a small hole at the lowest point so that any oily liquid may fall through and not clog the tube. For the determination of the vitamin A content of

cod-liver oil, a chromogen reaction is recommended in which a solution of SbCl<sub>3</sub> in CHCl<sub>3</sub> is used; this bottle is devised especially for this reagent but has also been used for liquids like Br<sub>2</sub>. The pressure of air pushes the reagent upward through the narrow tubing into a small vessel which, when filled, drains to hold exactly 2 cc. The connection is with ground glass, but the liquid itself does not come in contact with the joint.

L5 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1927:24350 CAPLUS  
DOCUMENT NUMBER: 21:24350  
ORIGINAL REFERENCE NO.: 21:2983a-b  
TITLE: Detection of formaldehyde in paper  
AUTHOR(S): Bentzen, Th.  
SOURCE: Paper Ind. (1927), 9, 617  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Place 25 cc. of freshly prepared  $\text{PhNH}_2$ -water (5 cc. of reagent  $\text{PhNH}_2$  agitated with 100 cc. distilled  $\text{H}_2\text{O}$  and filtered) and 0.5 g. of paper in a 12 + 1-in. pyrex test tube fitted with a 1-hole stopper carrying a two-bulb funnel tube in which is placed sufficient  $\text{PhNH}_2$ -water to fill the lower part of the bent connection between the two bulbs. On boiling the contents of the tube, if  $\text{CH}_2\text{O}$  is present, the  $\text{PhNH}_2$ -water in the bulb funnel will turn milky after a period of time depending on the amount of  $\text{CH}_2\text{O}$ . Absence of milkiness after 1 hr.'s boiling may be taken as proof of the absence of even traces of  $\text{CH}_2\text{O}$ .

L5 ANSWER 48 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1927:9461 CAPLUS  
DOCUMENT NUMBER: 21:9461  
ORIGINAL REFERENCE NO.: 21:1155g-i  
TITLE: A simple method of testing for the presence of sulfites in foodstuffs  
AUTHOR(S): Parkes, A. E.  
SOURCE: Analyst (1926), 51, 620-2  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB In the method originally proposed by P. (C. A. 16, 393)  $\text{SO}_2$  was liberated and made to act on starch paper having a drop of  $\text{I}_2$  solution at the center. In an improvement of this method, a conical flask of 50-100 cc. capacity is closed with a rubber stopper carrying a small thistle tube which is bent twice and has a 2-cc. bulb in each limb. In this apparatus the issuing gases are concentrated into a small space and made to come into

contact with a small volume of reagent. Treat 10 g. of meat, fish-paste, jams, dried fruits, etc. with 10 cc. of water and transfer to the flask. Of beer, cider, wines, etc., take 10 cc. of the fluid. Add 10 cc. of 2 N  $\text{HCl}$  in either case and a few small pieces of marble the size of a pea. Close the flask with the stopper carrying the thistle tube and introduce 2-3 drops of 0.1 N  $\text{I}_2$  solution 1 drop of  $\text{BaCl}_2$  solution. When the action of the acid on the marble slackens, heat gently. As soon as the first drop of condensate passes into the thistle tube, the color of the  $\text{I}_2$  solution will fade and a precipitate of  $\text{BaSO}_4$  appear. If a nephelometer is used the method can be made fairly satisfactory as a means of determining very small quantities of sulfite.

L5 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1922:19003 CAPLUS  
DOCUMENT NUMBER: 16:19003  
ORIGINAL REFERENCE NO.: 16:3232d-f  
TITLE: Estimation of rubber as tetrabromide  
AUTHOR(S): Utz, F.  
SOURCE: Journal of the Society of Chemical Industry, London (1921), 41, 383A  
CODEN: JSCIAN; ISSN: 0368-4075  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB A weighed amount of rubber tetrabromide is put in a flask closed with a rubber stopper. This stopper is fitted with a tap funnel, the stem of which reaches nearly to the bottom of the flask, and with a bent glass tube which is connected with a set of absorption bulbs. The flask is immersed in a cold oil bath and a cooled solution of 1-1.5 g. of  $\text{AgNO}_3$  and 4-8 g. of  $\text{K}_2\text{Cr}_2\text{O}_7$  in 40 cc. of concentrated  $\text{H}_2\text{SO}_4$  is cautiously added.

After introduction of the whole of this solution the bath is gradually warmed to  $135-40^\circ$ . After 45 min. the reaction is ended and gentle suction is applied at the outlet of the absorption bulbs (the tap of the funnel now being opened) to carry over all the Br. The liquid in the absorption

bulbs consists of 20 cc. of a mixture of 15% NaOH solution with a saturated solution

of Na<sub>2</sub>SO<sub>3</sub> in equal vols. After the reaction this reagent is transferred to a flask, strongly acidified with HNO<sub>3</sub> and its Br content determined. The rubber stopper outlasts a considerable number of detns.

L5 ANSWER 50 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1922:19002 CAPLUS

DOCUMENT NUMBER: 16:19002

ORIGINAL REFERENCE NO.: 16:3232d-f

TITLE: Estimation of rubber as tetrabromide

AUTHOR(S): Utz, F.

SOURCE: Gummi-Zeitung (1921), 36, 791-2

CODEN: GUZEA5; ISSN: 0367-5432

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A weighed amount of rubber tetrabromide is put in a flask closed with a rubber stopper. This stopper is fitted with a tap funnel, the stem of which reaches nearly to the bottom of the flask, and with a bent glass tube which is connected with a set of absorption bulbs. The flask is immersed in a cold oil bath and a cooled solution of 1-1.5 g. of AgNO<sub>3</sub> and 4-8 g. of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 40 cc. of concentrated H<sub>2</sub>SO<sub>4</sub> is cautiously added.

After introduction of the whole of this solution the bath is gradually warmed to 135-40°. After 45 min. the reaction is ended and gentle suction is applied at the outlet of the absorption bulbs (the tap of the funnel now being opened) to carry over all the Br. The liquid in the absorption bulbs consists of 20 cc. of a mixture of 15% NaOH solution with a saturated solution

of Na<sub>2</sub>SO<sub>3</sub> in equal vols. After the reaction this reagent is transferred to a flask, strongly acidified with HNO<sub>3</sub> and its Br content determined. The rubber stopper outlasts a considerable number of detns.

L5 ANSWER 51 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1919:15936 CAPLUS

DOCUMENT NUMBER: 13:15936

ORIGINAL REFERENCE NO.: 13:3202f-i

TITLE: Apparatus for the study of photosynthesis and respiration

AUTHOR(S): Osterhout, W. J. V.

SOURCE: Botanical Gazette (Chicago) (1919), 68, 60-2

CODEN: BOGAA5; ISSN: 0006-8071

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB The apparatus consists of a large tube closed by a stopper through which passes a tube A of Pyrex glass. Through the stopper at the other end passes the neck of an atomizer bulb B, with an opening at C for the intake of air. To the neck of the bulb is attached a tube of Pyrex glass which extends to within an inch of the bottom of the tube A. Plants are placed in the chamber with thin stems dipping in water contained in a small beaker. By means of the tubes D and E any desired amount of CO<sub>2</sub> may be run into the chamber. When this is finished the bulb is repeatedly squeezed so as to force the gases in the chamber to bubble through the liquid contained on the tube A, in which is distilled water to which an indicator sensitive to CO<sub>2</sub> (phenol sulfonephthalein, for example) is added. As the gas bubbles through the liquid the color of the indicator changes, and the bubbling is continued until the color becomes constant. To determine this constancy, the color is compared with a series of buffer solutions having the same concentration of indicator and contained in Pyrex tubes of the same size. The plant is now exposed to sunlight. After exposure, the gas is again

bubbled through the liquid. If the plant has taken CO<sub>2</sub> from the air, the indicator will show a greater degree of alkalinity than before. From the amount of change in alkalinity the change in tension of CO can be calculated. (See L. J. Henderson and E. J. Cohn, C. A. 11, 416, and J. F. McClendon, C. C. Gault, and S. Mulholland, C. A. 12, 391).

L5 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1915:12405 CAPLUS

DOCUMENT NUMBER: 9:12405

ORIGINAL REFERENCE NO.: 9:1956d-i,1957a-b

TITLE: The determination of dissolved oxygen in polluted waters

AUTHOR(S): Winkler, L. W.

CORPORATE SOURCE: Budapest

SOURCE: Zeitschrift fuer Untersuchung der Nahrungs- und Genussmittel sowie der Gebrauchsgegenstaende (1915), 29, 121-8

CODEN: ZNGEA2; ISSN: 0372-9419

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C. A. 9, 674. W. has modified his original method so that the presence of nitrites and moderate amts. of organic matter do not interfere with its accuracy. The modification consists in the addition of a solution of chlorinated lime and dilute H<sub>2</sub>SO<sub>4</sub> to the water at the time of sampling, the excess of CaOCl<sub>2</sub> being destroyed immediately before titration by means of KCNS. Fill a 250 cc. sample bottle almost completely with the water and add 10 drops (0.5 cc.) each of CaOCl<sub>2</sub> solution and 50% H<sub>2</sub>SO<sub>4</sub>; stopper and shake. The sample may then be reserved until any convenient time within 24 hrs. for analysis. The CaOCl<sub>2</sub> solution is prepared by rubbing 1 g. of fresh chlorinated lime (about 30% available Cl) with 100 cc. of Na<sub>2</sub>SO<sub>4</sub>.10H<sub>2</sub>O (25 g. per 100 cc.) and filtering the mixture. If the CaOCl<sub>2</sub> treatment is performed in the laboratory, at least 10 min. must be allowed before proceeding with the determination. Then add 2 cc. KCNS (1 g. c. p. white KCNS in 200 cc.

25%

Na<sub>2</sub>SO<sub>4</sub>.10H<sub>2</sub>O), shake, and allow the mixture to stand for 10 min. Add 1 cc. MnSO<sub>4</sub> solution (1 part MnSO<sub>4</sub>.4H<sub>2</sub>O and 2 parts water) and 2 cc. of KI-NaOH solution (2 parts NaOH, 1 part KI and 4 parts water) and 5 cc. of 50% H<sub>2</sub>SO<sub>4</sub>, or, if the water is very cold use 10 cc. of the last reagent. When much Fe is present in the water use 5 cc. of 50% H<sub>3</sub>PO<sub>4</sub> instead of the H<sub>2</sub>SO<sub>4</sub>. Titrate with 0.01 N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>. For the sake of uniformity this method can be applied to all kinds of waters except those heavily polluted with organic matter. In such cases only the gasometric method can be used. Introduce 10 g. of granulated marble, that has previously been freed from dust by sifting, into a 500 cc. bottle, and cover with a little acidified (HCl) water. When active evolution of gas begins pour off the dilute acid and then allow the water under exam. to flow through the bottle until the interior, including the marble fragments, is thoroughly washed. Then fill to the neck with the water and close with a one-hole stopper fitted with a cylindrical bulb (of 20 cc. capacity) the lower end of which communicates through the stopper with the contents of the bottle and the upper end of which bears an opening which may be fitted with a stopper and a capillary delivery tube for conducting the dissolved gases into a eudiometer. The stopper and bulb tube are fitted into the bottle containing the water in such a way that no air space remains below the stopper and the water rises to a height of about 8 mm. in the bulb tube. If the amount of water in the bottle is insufficient for this purpose, add enough saturated CaCl<sub>2</sub> solution (air-free) to accomplish it. Then fill the bulb tube to the neck with concentrated HCl, add a layer (1-2

cc.)

of water and fit a capillary delivery tube into the neck of the bulb. Place the large bottle in a capacious vessel containing water at

15°, since this is the best temperature for controlling the evolution of CO<sub>2</sub>. In a short time the HCl reaches the marble and CO<sub>2</sub> is generated; this carries with it the dissolved air in the water. Collect the gas in a eudiometer over 20% NaOH, and when the volume of gas ceases to increase measure in the usual way. Determine the O by absorption in alkaline

pyrogallol or

alkaline Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>. Deduct 0.192 cc. N and 0.083 cc. O as a correction for the gases dissolved in the concentrated HCl employed. For temps. between 0 and 30° W. has found the % of O in air dissolved in water to be  $n = 34.91 - 0.0438t$ , in which  $n = \%$  of O in the air, and  $t =$  temperature

L5 ANSWER 53 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1915:10489 CAPLUS

DOCUMENT NUMBER: 9:10489

ORIGINAL REFERENCE NO.: 9:1641c-i

TITLE: The routine detection and estimation of boric acid in butter

AUTHOR(S): Hawley, Herbert

SOURCE: Analyst (1915), 40, 150-2

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Turmeric reagent: A mixt of 5 g. powdered turmeric root and 5 g. tartaric acid is digested with 3 successive portions of 150 cc. warm alc. (industrial methylated spirits is satisfactory). Each digestion should continue for not less than 1 hr. and each successive portion should be filtered, and the volume finally made up to 500 cc. with alc. The reagent should be kept in the dark. The method, which is rapid and approximate, is as follows: Place 20 g. of butter in a 40-50 cc. beaker, melt on a Cu tray over a water bath or steam oven, and keep warm until the curd and aqueous layer have separated, leaving the fat clear. Pour off the fat as far as possible onto a filter paper placed in a small beaker (taking care that none of the aqueous layer is poured onto the filter), and determine the const. of the filtered fat in the usual manner. To the aqueous residue in the beaker add 18 cc. dilute HCl (20 cc. concentrate HCl per l.), stir, and keep warm for a few min. Allowing 2 cc. for the water in the butter, the 20 cc. of acid solution contains the H<sub>3</sub>BO<sub>3</sub> present in the butter, together with curd and a little fat. Remove 10 cc. of the fat-free liquid by means of a pipet dipped to the bottom of the liquid, and reject the liquid remaining in the beaker. Return the 10 cc. portion to the beaker. This portion is opalescent and almost free from fat, but contains a little curd. Allow the beaker to cool, and add 5 cc. of the turmeric reagent. The samples containing H<sub>3</sub>BO<sub>3</sub> slowly develop a reddish brown color, the intensity varying with the amount. Approx. estimates may be made by comparison with standards containing 0.5 cc. milk plus varying amts. of a standard H<sub>3</sub>BO<sub>3</sub> solution (1 g. H<sub>3</sub>BO<sub>3</sub> in 100 cc. dilute HCl (20 cc. concentrate HCl per l.)), the mixture being diluted to 10 cc. with the dilute HCl.

Milk may be preserved with HCHO for the purpose. Add 5 cc. of the turmeric reagent to each standard and make comparisons not less than 1.5 or more than 3 hrs. after the addition. An unmistakable color is developed in the presence of 0.05% H<sub>3</sub>BO<sub>3</sub>, and up to 0.5% can be estimated to the nearest 0.1%. The method is not recommended for samples containing more than 0.5% H<sub>3</sub>BO<sub>3</sub>. A simple device for rapidly measuring approx. 20 g. samples of butter consists of a 6 in. glass tube having a 7/8 in. bore. A plunger is made by boring a hole nearly through a solid rubber stopper which will just slide into the tube. A piece of narrow glass tubing with a bulb at the end is inserted in the hole and string tied tightly around the narrow end of the stopper. The plunger is raised and the tube pressed into the butter. The plunger is then pressed down to the mark which is adjusted so that the tube then contains 20 g.,

and the butter pressed out into the beaker.

L5 ANSWER 54 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1909:9346 CAPLUS

DOCUMENT NUMBER: 3:9346

ORIGINAL REFERENCE NO.: 3:1738c-g

TITLE: The Determination of Total Nitrogen According to E. A. Mitscherlich

AUTHOR(S): Merres, E.

SOURCE: Angewandte Chemie (1909), 22, 631

CODEN: ANCEAD; ISSN: 0044-8249

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The method of Mitscherlich for soil extracts is rendered applicable by the author for determining total N in all other materials. A solution containing a known amount of 3-10 mg. N or a solid substance mixed with 200 cc. H<sub>2</sub>O is put into a liter Kjeldahl flask and 3 g. of Devarda's alloy added (Al 59, Cu 39, Zn 2). The flask is provided with a Hengershoff distillation bulb, the tube of which is bent and passes through a bulb into a 500 cc. Kjeldahl flask, reaching to the bottom. This second flask serves as a receiver and in it are placed 100 cc. of H<sub>2</sub>SO<sub>4</sub> (d. 1.6). Then add 50 cc. of strong NaOH solution through opening in bulb to first flask and close opening with stopper. Now heat first flask carefully till the reaction becomes weaker, raise flame and distil over about 50 cc., remove flame and let the H<sub>2</sub>SO<sub>4</sub> "suck back" completely, then heat again and distil over about 50 cc. and let "suck back"; this is repeated 3 times in order to rinse out the receiver. The first flask is now heated till the contents are blue-green in color, cooled, and the melt dissolved in a known amount of water. Either the entire amount or an aliquot is distilled as follows: The distillation flask is provided with a bulb as before and connected to a 250 cc. Kjeldahl flask which is closed by a two-hole stopper; through the second hole a twice bent tube of fused quartz passes, the free end of which extends through a bulb into a 200 cc. Erlenmeyer flask almost touching the bottom. This flask is the receiver and in it is placed a suitable amount of 0.02 N acid. The necessary amount of NaOH is added as before to the first flask and it is then heated; distillation is complete in 20-30 min. The distillate is titrated back with 0.02 N NaOH, using congo red as indicator. A blank is run with each set of determinations and corrections made accordingly. The author claims an accuracy of  $\pm 0.000012$  g. and that this method is more accurate than the Jodlbaur or Forster methods in which the material must be in solid form. He calls especial attention to the use of a second flask and the quartz tube in order to get accurate results. The method is recommended for water analysis.

L5 ANSWER 55 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1908:4151 CAPLUS

DOCUMENT NUMBER: 2:4151

ORIGINAL REFERENCE NO.: 2:977g-i,978a-c

TITLE: Color Reactions of Pinolin

AUTHOR(S): Grimaldi, Carlo

CORPORATE SOURCE: Chem. Lab., Zollverwaltung, Verona

SOURCE: Chemiker-Zeitung (1908), 31, 1145-6

CODEN: CMKZAT; ISSN: 0009-2894

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A color reaction is described that permits the detection of 5% of pinolin or rosin spirit mixed with turpentine oil or 10% mixed with pine tar oil. The substance to be examined is carefully fractionated up to 170°. The fractions are treated cautiously with an equal volume of cone. HCl in test tubes, a small piece of tin added and the tubes placed in boiling water. After 5 min. they are thoroughly shaken, replaced in the bath and

shaken from time to time. Under these conditions, pure pinolin and its lower boiling fractions give a green color after 5 min. and the color becomes more intense upon cooling. Substances like turpentine oil, pine tar oil, camphor oil, mineral oil, etc., which resemble rosin spirit in physical and chemical properties, give colors with the reagent varying from straw-yellow to brown. The second reaction described is a modification of the Halphen test for rosin spirit (J. pharm. chim., 1902, 408). The reagent consists of 3 cc. bromine dissolved in CCl<sub>4</sub> to make 15 cc. It is contained in a glass cylinder with ground stopper carrying a peculiar stopcock that makes it possible to close the cylinder completely or to connect it with two glass tubes, one of which is attached to a rubber bulb and the other to an inverted funnel. A drop of each of the pinolin fractions is placed in a porcelain evaporator, and treated with 2 cc. of a reagent consisting of one volume of melted phenol crystals and 2 of CCl<sub>4</sub>. After the contents of the evaporator has been thoroughly mixed, it is placed under the inverted funnel, the stopcock opened and the bulb carefully pressed. A yellow color appears on the surface of the liquid and on the walls of the vessel. With pinolin boiling below 170° the yellow color appears at once and changes in a few minutes, to a green. With mixtures the color takes longer to appear but it is possible to detect less than 1% of pinolin in mixtures with turpentine oil or pine tar oil, providing sufficient of the material is available to make a number of fractionations. The two reactions described can of course be carried on simultaneously.

L5 ANSWER 56 OF 65 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1908:3173 CAPLUS  
 DOCUMENT NUMBER: 2:3173  
 ORIGINAL REFERENCE NO.: 2:737h-i  
 TITLE: A Ferment Saccharometer with Glycerol Indicator  
 AUTHOR(S): Goldmann, F.  
 SOURCE: Berichte der Deutschen Pharmazeutischen Gesellschaft (1908), 17, 62-6  
 CODEN: BERPAZ; ISSN: 0365-9925  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Unavailable

AB The old form of the apparatus consists of a U-tube having on one arm a bulb closed with a heavy stopper and on the other graduations. It is filled with mercury to the zero mark and the sample of urine containing a little added yeast is placed over the mercury in the bulb arm, and the amount of rise of mercury in the other arm after the fermentation, gives the percentage of sugar in the sample. The new ferment saccharometer is filled with glycerol instead of mercury, and a shorter U-tube is joined to the bulb end of the apparatus in which the sample of urine rests out of contact with the glycerol.

L5 ANSWER 57 OF 65 INSPEC (C) 2006 IET on STN  
 ACCESSION NUMBER: 2004:8214456 INSPEC  
 DOCUMENT NUMBER: A2005-03-2880-005; B2005-02-7530B-007  
 TITLE: Chemical dosimetry system for criticality accidents  
 AUTHOR: Miljanic, S.; Ilijas, B. (Ruder Boskovic Inst., Zagreb, Croatia)  
 SOURCE: Radiation Protection Dosimetry (2004), vol.110, no.1-4, p. 477-81, 13 refs.  
 CODEN: RPDODE, ISSN: 0144-8420  
 SICI: 0144-8420(2004)110:1/4L.477:CDSC;1-A  
 Published by: Oxford University Press, UK  
 Conference: Advances in Nuclear Particle Dosimetry for Radiation Protection and Medicine. Ninth Symposium on Neutron Dosimetry, Delft, Netherlands, 28 Sept.-3 Oct.

2003

DOCUMENT TYPE: Conference; Conference Article; Journal  
TREATMENT CODE: Practical; Experimental  
COUNTRY: United Kingdom  
LANGUAGE: English

AN 2004:8214456 INSPEC DN A2005-03-2880-005; B2005-02-7530B-007

AB Ruder Boskovic Institute (RBI) criticality dosimetry system consists of a chemical dosimetry system for measuring the total (neutron+gamma) dose, and a thermoluminescent (TL) dosimetry system for a separate determination of the gamma ray component. The use of the chemical dosimeter solution chlorobenzene-ethanol-trimethylpentane (CET) is based on the radiolytic formation of hydrochloric acid, which protonates a pH indicator, thymolsulphonphthalein. The high molar absorptivity of its red form at 552 nm is responsible for a high sensitivity of the system: doses in the range 0.2-15 Gy can be measured. The dosimeter has been designed as a glass ampoule filled with the CET solution and inserted into a pen-shaped plastic holder. For dose determinations, a newly constructed optoelectronic reader has been used. The RBI team took part in the International Intercomparison of Criticality Accident Dosimetry Systems at the SILENE reactor, Valduc, June 2002, with the CET dosimetry system. For gamma ray dose determination TLD-700 TL detectors were used. The results obtained with CET dosimeter show very good agreement with the reference values

L5 ANSWER 58 OF 65 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1999:6448294 INSPEC

DOCUMENT NUMBER: ~~C2000-02-7320-036~~

TITLE: Further development of a versatile microscale automated workstation for parallel adaptive experimentation

AUTHOR: Cork, D.G.; Sugawara, T.; (Medicinal Chem. Labs., Takeda Chem. Ind. Ltd., Osaka, Japan), Lindsey, J.S.; Corkan, L.A.; Hai Du

SOURCE: Laboratory Robotics and Automation (1999), vol.11, no.4, p. 217-23, 4 refs.  
CODEN: LRAUEY, ISSN: 0895-7533  
SICI: 0895-7533(1999)11:4L:217:FDVM;1-0  
Price: 0895-7533/99/040217-07  
Published by: Wiley, USA

DOCUMENT TYPE: Journal  
TREATMENT CODE: Practical  
COUNTRY: United States  
LANGUAGE: English

AN 1999:6448294 INSPEC DN C2000-02-7320-036

AB We have further developed our microscale automated chemistry workstation for investigating the optimization of reaction conditions. The workstation includes a Cartesian robot for solvent delivery and reagent/sample handling, a 60 vessel reaction block, a UV-visible absorption spectrometer, and vial racks for compound storage. The article describes the following hardware additions that increase the scope and versatility of the workstation: (a) an analytical high performance liquid chromatography (HPLC) instrument and accompanying hardware interface (slide rail, autosampler); (b) three reactor blocks of 20 vessels each, with independent temperature control of each reactor block between ca. 0 and 80°C; (c) a shaker rack for mixing, dilution, or extraction of samples; (d) a rotary valve on the dispense line for complete isolation of 4 independent solvent lines; (e) sample workup features using disposable cartridges or filters; (f) provisions for dispensing inert gas, for example, for flushing through reactors or for storing solvents and performing transfer/dispense operations under. Using the new features, we are able to obtain useful analytical data from a wider range of reaction mixtures, perform parallel



reactions at different temperatures, and handle solvents and sensitive reagents

L5 ANSWER 59 OF 65 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1970:87738 INSPEC  
DOCUMENT NUMBER: B1970-004002  
TITLE: Gas filled cold cathode indicator tube  
AUTHOR: Koshizuka, M.; Ohfuji, N.; Sato, S.  
PATENT ASSIGNEE: Nippon Radio Co. Ltd  
PATENT INF., ORIGINAL: US 3437861 19690408  
APPLICATION INFORMATION: 19660214  
PRIORITY INF., ORIGINAL: JP-40/9396 19650219  
DOCUMENT TYPE: Patent  
COUNTRY: United States  
LANGUAGE: English

AN 1970:87738 INSPEC DN B1970-004002

AB A discharge type indicator tube having a stem which includes a shell and an insulator spacer for supporting and locating a plurality of cathode electrodes which have predetermined shapes. If a shell is fabricated from an insulating material, it may also function as the spacer. The stem also provides means to pass lead wires from the cathodes there through and the shell is adapted to be sealed to the lower portion of the tube bulb, thereby closing off the tube

L5 ANSWER 60 OF 65 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1960:B07974 INSPEC  
DOCUMENT NUMBER: 1960B07974  
TITLE: Detection and identification of distillates in tubes  
AUTHOR: Gobin, M.  
SOURCE: Le Vide (May 1960 - June 1960), vol. 15, p. 263-267  
DOCUMENT TYPE: Journal  
COUNTRY: France  
LANGUAGE: French

AN 1960:B07974 INSPEC DN 1960B07974

AB In order to identify deposits and stains which occur on the components of electron tubes the parts are removed using non-contaminating tools. They are individually wrapped in a suitable filter paper impregnated with an appropriate reagent and this package is then sharply compressed between mica sheets. The paper in contact with the part being investigated shows a print of the deposit on the component which can then be interpreted by normal chromatographic methods. Examples are given of the identification of barium, strontium and nickel deposits on tube micas. Internal bulb deposits can be identified by slightly modifying the procedure. Theoretically all elements giving a characteristic coloured drop reaction can be detected down to the sensitivity limit of the reaction.

L5 ANSWER 61 OF 65 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1923:A01131 INSPEC  
DOCUMENT NUMBER: 1923A01131  
TITLE: Stark effect on hydrogen secondary spectrum  
AUTHOR: Kiuti, M.  
SOURCE: Japanese Journal of Physics (1922), vol. 3, no. 4, p. 29-39  
DOCUMENT TYPE: Journal  
COUNTRY: Japan  
LANGUAGE: English

AN 1923:A01131 INSPEC DN 1923A01131

AB An investigation in the visible region, special attention being given to the Fulcher bands. The method employed was Lo Surdo's. The discharge tube was in the form of a Pluecker tube, with one of the end bulbs

removed. The capillary was 1 mm. in diameter. A continuous flow of hydrogen was maintained by an oil-immersed rotary pump. The gas was washed with water and concentrate sulphuric acid, and entered a 2-litre flask; this flask was connected to the discharge tube by a capillary of 0.1 mm. bore and length 1 m. Another 2-litre flask between the pump and the tube helped to keep the pressure stationary. The length of the Crooke's dark space was about 2 mm.; this served as an indicator of pressure fluctuations. The portion of the capillary 2 mm. from the cathode was focused on the slit of the spectroscope, using two lenses; a quartz Wollaston prism placed between the lenses separated the p- and s-components. A plane grating with 590 lines per mm. was used; the dispersion in the first order was 31 A.U. per mm. Owing to the arrangement employed, for many lines the image with no field was too feeble for use as a standard, and so a comparison Pluecker hydrogen tube was used. Exposure was 12-2 hours. Two 5000-volt d.c. dynamos were used in series, with a 300,000 ohm manganin resistance in the circuit to make the discharge more stable. The terminal voltage of the tube was 4000 to 6000 volts, being kept constant during an exposure by regulating the exciting current to the dynamos. The intensity of the field was deduced from the separation of the Balmer lines; it was found that the present results were more nearly in agreement with Epstein's theory than Stark's results. More than 100 lines are found to be affected by the strength of field used and under the present dispersion; most of these were on the long wave-length side of  $\lambda 5300$ . In most cases the lines were displaced towards the red, or separated asymmetrically. The lines most affected were in the neighbourhood of  $\lambda 5400$  and  $\lambda 5930-5982$ . In all instances the separation increases either in proportion to, or more rapidly than, the field intensity. Between  $\lambda 5300$  and  $\lambda 5700$  the relative intensities of the Pluecker tube and the positive rays are very different; e.g.. The first and third members of the second Fulcher band are weakened in the positive rays as one goes out from the head, alternately. No simple rule was found for the Fulcher bands. In both bands the effect on the first and third members is large and small alternately; this may be of importance in deducing the structure of the origin of the secondary spectrum. Tables of results are given, and a photograph.

L5 ANSWER 62 OF 65 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2006(39):10543 COMPENDEX

TITLE: Microfluidic sequential injection analysis in a short capillary.

AUTHOR: Du, Wen-Bin (Institute of Microanalytical Systems  
Department of Chemistry Zhejiang University, Hangzhou,  
China); Fang, Qun; Fang, Zhao-Lun

SOURCE: Analytical Chemistry v 78 n 18 Sep 15 2006 2006.p  
6404-6410

CODEN: ANCHAM ISSN: 0003-2700

PUBLICATION YEAR: 2006

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

LANGUAGE: English

AN 2006(39):10543 COMPENDEX

AB An automated microfluidic sequential injection analysis system that efficiently manipulates sample and reagent solutions in the nanoliter range in [similar to] 10 s per analytical cycle is described. The system consisted of a 6-cm-long, typically 75- $\mu$ m i.d., fused-silica capillary (which functioned as a sampling probe and reactor as well as a flow-through detection cell), a horizontally oriented waste reservoir that provided liquid level differences for inducing gravity-driven flows, an autosampling device holding samples and reagents with horizontally fixed slotted microvials, and a laser-induced fluorescence detection system. Sample and reagent zones were sequentially

introduced via gravity-driven flow by scanning the capillary tip (functioning as the sampling probe) through the vial slots, while vials containing sample, reagent, and carrier were sequentially rotated to the probe by programmed movement of the vial holders. Sequentially injected nanoliter zones were rapidly mixed by convection and diffusion within the carrier flow, demonstrating a behavior that conformed well to the Taylor dispersion model, and zone penetration effects were characterized and optimized under Taylor's dispersion theory guidelines. For the determination of fluorescein, a high throughput of 400 h<sup>-1</sup> was achieved, rapidly producing calibration curves (five points) within 45 s. Owing to its adaptability to the Taylor's dispersion model, the system was used also for measuring diffusion coefficients of fluorescent species. Potentials for using the system in enzyme inhibition assays were demonstrated by a reaction involving the conversion of fluorescein digalactoside to fluorescent hydrolysates via beta-galactosidase and the inhibition of beta-galactosidase by diethylenetriaminepentaacetic acid. \$CPY 2006 American Chemical Society. 30 Refs.

L5 ANSWER 63 OF 65 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2006(8):14233 COMPENDEX

TITLE: Prototype high-throughput system for hydrothermal synthesis and X-ray diffraction of microporous and mesoporous materials.

AUTHOR: Caremans, T.P. (Centre for Surface Chemistry and Catalysis K.U. Leuven, 3001 Leuven, Belgium); Kirschhock, C.E.A.; Verlooy, P.; Paul, J.S.; Jacobs, P.A.; Martens, J.A.

SOURCE: Microporous and Mesoporous Materials v 90 n 1-3. SPEC. ISS. Mar 20 2006 2006.p 62-68  
CODEN: MIMMFJ ISSN: 1387-1811

PUBLICATION YEAR: 2006

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical

LANGUAGE: English

AN 2006(8):14233 COMPENDEX

AB In the hydrothermal synthesis of microporous and mesoporous materials a large number of parameters including chemical composition of the mixture, reagent sources, organic templates, temperature, and time play a role. The high-throughput experimental approach facilitates screening of this multi-parameter space for conditions favoring formation of desired zeolite phases and ordered mesoporous materials. A critical issue in the development of a high-throughput system for hydrothermal synthesis is the avoidance of cross-contamination between the individual synthesis volumes. Further important issues are automation of reactant dosing, product filtration, calcination and identification. In this work, a prototype multi-clave was designed with three 5 mL synthesis vials for operation at temperatures up to 200 deg C under autogenous pressure. The multi-clave is equipped with a sample tray for filtration, washing and drying of all of the synthesis products at the same time. This multi-filter also serves as the sample holder for X-ray diffraction characterization. The innovation resides in the multi-clave concept and the integration of the entire process from synthesis over product workup to XRD characterization without necessitating individual sample transfer. The performance of the prototype was evaluated with the synthesis of the mesoporous-microporous hybrid material zeolite-2, and of clathrasils. \$CPY 2005 Elsevier Inc. All rights reserved. 37 Refs.

L5 ANSWER 64 OF 65 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2005(39):9912 COMPENDEX

TITLE: Transverse diffusion of laminar flow profiles to produce capillary nanoreactors.

AUTHOR: Okhonin, Victor (Department of Chemistry York University, Toronto, Ont. M3J 1P3, Canada); Liu, Xin; Krylov, Sergey N.  
SOURCE: Analytical Chemistry v 77 n 18 Sep 15 2005 2005.p 5925-5929  
CODEN: ANCHAM ISSN: 0003-2700  
PUBLICATION YEAR: 2005  
DOCUMENT TYPE: Journal  
TREATMENT CODE: Experimental  
LANGUAGE: English

AN 2005(39):9912 COMPENDEX

AB We introduce transverse diffusion of laminar flow profiles (TDLPP), the first generic method for mixing two or more reactants inside capillaries. Conceptually, solutions of reactants are injected inside the capillary by pressure as a series of consecutive plugs. Due to the laminar nature of flow inside the capillary, the nondiffused plugs have parabolic profiles with predominantly longitudinal interfaces between them. After injection, the plugs are mixed by transverse diffusion; longitudinal diffusion does not contribute to mixing. To prove the principle, we used TDLPP to mix two reactants—an enzyme and its substrate. After mixing the reactants by TDLPP, we incubated reaction mixtures for different periods of time and measured the reaction kinetics. We found that the reaction proceeded in time- and concentration-dependent fashion, thus confirming that the reactants were mixed by TDLPP. Remarkably, the experimental reaction kinetics were not only in qualitative agreement but also in good quantitative agreement with theoretically predicted ones. TDLPP has a number of enabling features. By facilitating the preparation of reaction mixtures inside the capillary, TDLPP lowers reagent consumption to nanoliters (microliters are required for conventionally mixing reagents in a vial). The reaction products can be then analyzed "on-line" by capillary separation coupled with optical, electrochemical, or mass spectrometric detection. The combination of TDLPP with capillary separation will be an indispensable tool in screening large combinatorial libraries for affinity probes and drug candidates: a few microliters of a target protein will be sufficient to screen thousands of compounds. The new method paves the road to a wide use of capillary nanoreactors in different areas of physical and life sciences. \$CPY 2005 American Chemical Society. 20 Refs.

L5 ANSWER 65 OF 65 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1999(49):2138 COMPENDEX  
TITLE: Further development of a versatile microscale automated workstation for parallel adaptive experimentation.

AUTHOR: Cork, David G. (Takeda Chemical Industries Ltd, Osaka, Jpn); Sugawara, Tohru; Lindsey, Jonathan S.; Corkan, L. Andrew; Du, Hai

SOURCE: Laboratory Robotics and Automation v 11 n 4 1999.p 217-223

CODEN: LRAUEY ISSN: 0895-7533

PUBLICATION YEAR: 1999

DOCUMENT TYPE: Journal

TREATMENT CODE: Application; General Review

LANGUAGE: English

AN 1999(49):2138 COMPENDEX

AB We have further developed our microscale automated chemistry workstation for investigating the optimization of reaction conditions. The workstation includes a Cartesian robot for solvent delivery and reagent /sample handling, a 60-vessel reaction block, a UV-Vis absorption spectrometer, and vial racks for compound storage. This article describes the following hardware additions that increase the scope and versatility of the workstation: (a) an analytical high performance liquid

chromatography (HPLC) instrument and accompanying hardware interface (slide rail, autosampler); (b) three reactor blocks of 20 vessels each, with independent temperature control of each reactor block between ca.0 and 80 degree C; (c) a shaker rack for mixing, dilution, or extraction of samples; (d) a rotary valve on the dispense line for complete isolation of 4 independent solvent lines; (e) sample workup features using disposable cartridges or filters; (f) provisions for dispensing inert gas, for example, for flushing through reactors or for storing solvents and performing transfer/dispense operations under.Using the new features, we are able to obtain useful analytical data from a wider range of reaction mixtures, perform parallel reactions at different temperatures, and handle solvents and sensitive reagents.(Author abstract) 4 Refs.

=> display 14 1-21 ibib abs

L4 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2002:275863 CAPLUS  
 DOCUMENT NUMBER: 136:295023  
 TITLE: Multi-well rotary synthesizer with sealing waste tube system for synthesizing polymer chains  
 INVENTOR(S): McLuen, Gary R.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: PCT Int. Appl., 34 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002028524	A2	20020411	WO 2001-US30612	20010927
WO 2002028524	A3	20030130		
WO 2002028524	C2	20030530		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2002024339	A5	20020415	AU 2002-24339	20010927
PRIORITY APPLN. INFO.:			US 2000-679142	A 20001003
			WO 2001-US30612	W 20010927

AB An apparatus for synthesizing polymer chains includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials, and a waste tube system for purging material from the vials. A purging operation can be selectively performed on one or more of the banks of vials. The multiple banks of valves provide an addnl. number of reagent choices while operating in a serial mode and faster reagent distribution while operating in a parallel mode. The plurality of vials are stored in the cartridge and are divided among individual banks wherein each bank of vials has a corresponding drain. There is at least one waste tube system for expelling the reagent solution from vials within a particular bank of vials when the waste tube system is coupled to the corresponding drain. The cartridge holding the

plurality of vials rotates relative to the stationary banks of valves and the waste tube system. The controller rotates the cartridge and operates the banks of valves and the waste tube system in response to the required sequence of dispensing various reagent solns. and flushing appropriate vials in order to form the desired polymer chain within each vial. Preferably, the waste tube system includes a drain plug ball within a drain plug and a waste tube with a vertical sliding member. During a flushing procedure, the waste tube is raised so that the vertical member engages the drain plug ball, breaking a seal maintained by the drain plug ball and allowing material to be flushed from the corresponding bank of vials through the waste tube. During all other times, the drain plug ball is forced against an O-ring by a spring in order to maintain the seal within the drain plug.

L4 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1964:441942 CAPLUS

DOCUMENT NUMBER: 61:41942

ORIGINAL REFERENCE NO.: 61:7331a-b

TITLE: Distillation apparatus for micro determination of nitrogen

AUTHOR(S): Dixon, S. E.; Shuel, R. W.

CORPORATE SOURCE: Ontario Agr. Coll., Guelph, Can.

SOURCE: Chemist-Analyst (1962), 51(3-4), 84  
CODEN: CHANAA; ISSN: 0095-8484

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The distillation apparatus has proved satisfactory for the determination of the N content of

individual insect larvae or samples of similar N content (15-150  $\gamma$  of N). The technique is described. The apparatus consists of an outer chamber filled with glycerol; an inner distillation chamber, to which the Kjeldahl digest is transferred and which is closed by a silicone or rubber plug; a condensing arm of 2-mm. tubing containing a bulb large enough to prevent the suck-back of the absorbing reagent; and a simple water jacket.

L4 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1963:36074 CAPLUS

DOCUMENT NUMBER: 58:36074

ORIGINAL REFERENCE NO.: 58:6179d-g

TITLE: Rapid radiometric microgram determinations via precipitation or extraction

AUTHOR(S): Spitzzy, H.; Dosudil, I.

CORPORATE SOURCE: Univ. Graz, Austria

SOURCE: Microchemical Journal, Symposium Series (1962), 2, 919-27

CODEN: MJSSAZ; ISSN: 0544-0165

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB  $\gamma$  amts. of Na and K were determined by precipitation with labeled reagents and radiometry. Extraction methods with dithizone and Zn65 were used to determine  $\gamma$  amts. of Cu, Ag, and Hg. Pptns. were carried out in a modified Pregl filter tube which was expanded on one side to provide a reaction bulb of 0.3-ml. capacity. The sample and reagents were introduced into the bulb through a slit opening on the opposite side and were stirred while the tube was horizontal. When precipitation was complete, the tube was turned to a vertical position, and the precipitate was spread on the filter disk with a jet of washing solution. The supernatant was drawn off, and the precipitate was washed. The filter

tube with precipitate was fixed in a definite position relative to a well-type scintillation counter. The measured activity was compared with a standard curve. This technique was suitable for determining 0.2-100  $\gamma$  K by

precipitation

with Na hexanitritocobaltate labeled with Co60 and for determining 0.3-100  $\gamma$  Na by precipitation with Zn uranyl acetate labeled with Zn65.

Satisfactory results were obtained in the 1-12  $\gamma$  Na range when less than twice as much K as Na was present; 3 times as much K as Na could be tolerated in the 100  $\gamma$  Na range. For extns., aqueous solns. containing 0.5-30  $\gamma$  Cu, Ag, or Hg were extracted with a measured excess of dithizone. The extract was separated and transferred to a titration vessel

which

contained a measured excess of Zn65 standard solution in an acetate buffer. After the unused dithizone had combined with an equivalent part of standard min., the activity remaining in the aqueous solution was measured. In this manner, the dithizone used by the unknown ion was determined by one radiometric measurement. Both methods require only 15-20 min. for 1 determination

L4 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1952:24571 CAPLUS

DOCUMENT NUMBER: 46:24571

ORIGINAL REFERENCE NO.: 46:4169f-h

TITLE: The influence of vulcanized rubber on the quality of distilled water

AUTHOR(S): Christiansen, Eivind

SOURCE: Meddelelser fra Norsk Farmaceutisk Selskap (1951), 13, 121-30, 135-53

CODEN: MNFSAW; ISSN: 0029-1927

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The effect of a number of rubber samples, including various qualities of rubber stoppers, vial caps, catheters, and rubber tubing, on distilled water was investigated. The following criteria were used for judging the water after contact with the rubber samples: color, odor, taste, presence of NH<sub>3</sub>, change in pH, change in specific conductance, color reaction with dithizone, and presence of pyrogens. The term "Dithizone number" (I) was coined, designating the number of days of contact with the rubber sample before the water caused the dithizone reagent (5 mg. dithizone in 100 ml. CCl<sub>4</sub>) to change from green to pink. There was found to be a relation between I and the pyrogenic effect. Rubber samples with low I imparted pyrogens to distilled water, whereas water in contact with rubber samples having a I of 10 or more were always pyrogen-free. A number of standards were suggested for rubber materials intended for medical or pharmaceutical use.

L4 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1951:10803 CAPLUS

DOCUMENT NUMBER: 45:10803

ORIGINAL REFERENCE NO.: 45:1903h-i, 1904a

TITLE: Photoelectric spot analysis of antimony and bismuth

AUTHOR(S): Sudo, Toshio; Hayase, Kitaro

CORPORATE SOURCE: Tokyo Univ.

SOURCE: Science (Washington, DC, United States) (1951), 113, 11-12

CODEN: SCIEAS; ISSN: 0036-8075

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB To test for Sb<sup>3+</sup> a 5% solution of H<sub>3</sub>PO<sub>4</sub>.12MoO<sub>3</sub> is used and for Bi<sup>3+</sup> a solution prepared from 1 g. cinchonine, 2 g. KI, a few drops of HNO<sub>3</sub>, and water to make 100 ml. Immerse a piece of filter paper in the reagent, add 1 drop of the solution to be tested and in the test for Sb heat in a steam bath for 5 min. Place the filter paper showing a colored

spot (blue for Sb and pink for Bi) between the light bulb and the photoelec. tube of a photometer and insert a screen having a round hole (12 mm. diameter) between the light bulb and the filter paper. Center the colored spot on the hole which causes a part of the light to be absorbed by the colored spot. Record the microammeter reading when the light transmitted through the colored spot is less than that through the rest of the paper. Correct the error owing to varying thickness of the paper by a blank test on each paper used. From the reading, calculate the percent of Sb or Bi. Good results are cited for determining 0.18  $\gamma$  of Sb and from 0.30 to 9.4  $\gamma$  of Bi.

L4 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1946:36733 CAPLUS

DOCUMENT NUMBER: 40:36733

ORIGINAL REFERENCE NO.: 40:7074g-i

TITLE: Determination of carbon dioxide under field conditions by the volumetric method

AUTHOR(S): Khrizman, I. A.

SOURCE: Zavodskaya Laboratoriya (1946), 12, 250-1

CODEN: ZVDLAU; ISSN: 0321-4265

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A jar is closed with a rubber stopper through which a glass tube is passed whose lower part is blown out in the shape of a sealed cylindrical bulb. The upper part of this bulb has a side opening. The glass tube is connected to a 100-ml. buret filled with concentrated NaCl solution acidified with several drops of HCl and colored with an indicator. The other end of the buret is connected to a regulating bulb by means of rubber tubing. Place 0.5 g. of the ore sample in the jar, fill the bulb with 10% HCl nearly to the level of the side opening, and stopper the jar. Determine the volume of CO<sub>2</sub> evolved by the difference in the levels of the liquid in the buret before and after the reaction.

L4 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1943:42424 CAPLUS

DOCUMENT NUMBER: 37:42424

ORIGINAL REFERENCE NO.: 37:6697a-c

TITLE: Anaerobic single-tube cultures

AUTHOR(S): Fuhrmann, Franz

SOURCE: Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 2, Naturwissenschaftliche: Allgemeine, Landwirtschaftliche und Technische Mikrobiologie (1943), 2, 105, 406-14

CODEN: ZBPIA9; ISSN: 0044-4057

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Three special tubes for single anaerobic cultures are described. The size of each is about 200 + 28 mm. Tube 1 has a bulb blown at the closed end into which 12 cc. of 20% Na<sub>2</sub>CO<sub>3</sub> or NaOH can be placed. Just above this is a side bulb in which 8 cc. of 20% pyrogallol solution is placed, a small side bulb near the open end of the tube in which is placed a little indicator solution for O (0.2% methylene blue in 0.5% dextrose), or filter paper soaked in the indicator solution. The inoculated culture tube is inserted into the special tube and the latter tightly stoppered. The assembly is then tilted so that the pyrogallol is mixed with the alkali. Tube 2 is similar except that a glass stopcock is ground into the open end so that the assembly can be evacuated. Tube 3 is like tube 2 except that the 2 lower bulbs are replaced by a ground-in stopcock, so that the air in the



assembly can be replaced by some inert gas such as H or N. With tube 3, CO<sub>2</sub> or other gases formed during growth can be drawn into appropriate absorption tubes.

L4 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1939:39880 CAPLUS

DOCUMENT NUMBER: 33:39880

ORIGINAL REFERENCE NO.: 33:5628g-i,5629a-d

TITLE: Determination of the NO content of coal-distillation gases

AUTHOR(S): Berkhoff, G.; van den Bout, M. F.

SOURCE: Het Gas (1939), 59, 53-9

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Different methods for NO determination Schuftan (cf. C. A. 26, 2849), Fulweiler (cf. C. A. 29, 5251.4), Shaw (cf. C. A. 30, 8573.3), Guyer and Weber (cf. C. A. 28, 880.4), etc., are discussed; the last method was chosen. The accuracy of the method was checked by adding known amts. of NO (diluted with 500 parts N<sub>2</sub>) to the gas. For each determination 10 l. gas was used, passed

at a

rate of 20 l. per hr. Numerous expts. were undertaken to check the results for high and low NO concns. and curves are given for interpretation of the results. For NO contents between 0.01 and 2 p. p. m. the contact vessels are arranged KMnO<sub>4</sub>-Ilosvay reagent -KMnO<sub>4</sub>-Ilosvay and the NO content is determined separately for the 1st and 2nd Ilosvay vessel. A curve relating the 2 figures, determined experimentally, makes it possible to calculate the actual total NO content. Between 1 and 2 p. p. m. NO the first vessel absorbs 90 to 95% of the total NO present; at 0.1 p. p. m. this is reduced to 70%, at 0.02 p. p. m. to only 50%. Measurements on NO content of pure H<sub>2</sub> confirmed these data; in these tests 4 pairs of oxidation and absorption vessels were used. For the 20 l. per hr. rate the absorption is 95% for 2-17 p. p. m. NO. The accuracy of these detns. is estimated to be 10%. The Schuftan method on the same gases gave results approx. 10 times higher for the particular type of coke-oven gas used. This ratio depends on the diolefin content of the gas. The method finally used is: The Ilosvay reagent is colorless and prepared shortly before use from equal amts. of solution (I) 2 g. sulfanilic acid in a mixture of 100 cc. nitrite-free water and 100 cc. AcOH (300 cc. H<sub>2</sub>O is added) and solution (II) 0.6 g.  $\alpha$  naphthylamine, 400 cc. nitrite-free water and 100 cc. AcOH (the solution should not be heated). The KMnO<sub>4</sub> stock solution is 5% in nitrite-free water, boiled up and cooled. Shortly before use 5 cc. nitrite-free concentrated H<sub>2</sub>SO<sub>4</sub> is added to 100 cc. KMnO<sub>4</sub> solution. The standard NaNO<sub>2</sub> solution is prepared from 30 mg. pure NaNO<sub>2</sub>

in

nitrite-free water to 1 l., kept in the dark; it is good for 3 months and is standardized at intervals. Nitrite-free water is prepared by redistn. over Ba(OH)<sub>2</sub>. The apparatus consists of 3 reaction vessels: a glass U tube, the up leg being of 17 mm. diameter, 440 mm. high with a 25-mm. radius bulb near the top, a porolith filter, 5 mm. thick type ff (Meissen) in a 14 mm. restriction near the base of the U tube for dispersion of the gas. The first and third vessels hold 15 cc. Ilosvay reagent; the second has 65 cc. acidified KMnO<sub>4</sub> solution. Auxiliaries are flow meter, gas meter, bypass, pressure regulator and manometer. The resistance of the apparatus is about 100 mm. Hg.; hence the gas is usually pumped through. At a 20 l. per hr. rate the Ilosvay tube froths abundantly. The Seebaum type vessels give equally good results. All joints are glass to glass. For the colorimetry of the solution obtained 20-mm. tubes, holding 50 cc. are used. All tubes, test as well as standard, are allowed to stand 10 min. before reading. 0.1 cc. standard NaNO<sub>2</sub> solution is equivalent to 0.21 + 10<sup>-2</sup> cc. NO in the gas.

L4 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1931:34839 CAPLUS  
DOCUMENT NUMBER: 25:34839  
ORIGINAL REFERENCE NO.: 25:3878i, 3879a-b  
TITLE: Storage and delivery apparatus for antimony chloride solutions and other corrosive reagents  
AUTHOR(S): Middleton, G.  
SOURCE: Analyst (1931), 56, 236-7  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The apparatus consists of a 600-cc. bottle of amber glass fitted with a stopper through which a glass tube passes. The tubing carries 2 chambers, one ending just below the stopper and connecting on the outside with a CaCl<sub>2</sub> tube (ground-glass connection) through which air can be forced by a rubber atomizer bulb. The inner part of the tubing serves for the passage of the solution from the bottle to the measuring device. This tubing reaches nearly to the bottom of the bottle and is bent upwards a little at the bottom, so as not to draw up any sediment, and is provided with a small hole at the lowest point so that any oily liquid may fall through and not clog the tube. For the determination of the vitamin A content of cod-liver oil, a chromogen reaction

is

recommended in which a solution of SbCl<sub>3</sub> in CHCl<sub>3</sub> is used; this bottle is devised especially for this reagent but has also been used for liquids like Br<sub>2</sub>. The pressure of air pushes the reagent upward through the narrow tubing into a small vessel which, when filled, drains to hold exactly 2 cc. The connection is with ground glass, but the liquid itself does not come in contact with the joint.

L4 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1927:24350 CAPLUS  
DOCUMENT NUMBER: 21:24350  
ORIGINAL REFERENCE NO.: 21:2983a-b  
TITLE: Detection of formaldehyde in paper  
AUTHOR(S): Bentzen, Th.  
SOURCE: Paper Ind. (1927), 9, 617  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Place 25 cc. of freshly prepared PhNH<sub>2</sub>-water (5 cc. of reagent PhNH<sub>2</sub> agitated with 100 cc. distilled H<sub>2</sub>O and filtered) and 0.5 g. of paper in a 12 + 1-in. pyrex test tube fitted with a 1-hole stopper carrying a two-bulb funnel tube in which is placed sufficient PhNH<sub>2</sub>-water to fill the lower part of the bent connection between the two bulbs. On boiling the contents of the tube, if CH<sub>2</sub>O is present, the PhNH<sub>2</sub>-water in the bulb funnel will turn milky after a period of time depending on the amount of CH<sub>2</sub>O. Absence of milky after 1 hr.'s boiling may be taken as proof of the absence of even traces of CH<sub>2</sub>O.

L4 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1927:9461 CAPLUS  
DOCUMENT NUMBER: 21:9461  
ORIGINAL REFERENCE NO.: 21:1155g-i  
TITLE: A simple method of testing for the presence of sulfites in foodstuffs  
AUTHOR(S): Parkes, A. E.  
SOURCE: Analyst (1926), 51, 620-2  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB In the method originally proposed by P. (C. A. 16, 393) SO<sub>2</sub> was liberated and made to act on starch paper having a drop of I<sub>2</sub> solution at the center. In an improvement of this method, a conical flask of 50-100 cc. capacity is closed with a rubber stopper carrying a small thistle

tube which is bent twice and has a 2-cc. bulb in each limb. In this apparatus the issuing gases are concentrated into a small space and

made to come into contact with a small volume of reagent. Treat 10 g. of meat, fish-paste, jams, dried fruits, etc. with 10 cc. of water and transfer to the flask. Of beer, cider, wines, etc., take 10 cc. of the fluid. Add 10 cc. of 2 N HCl in either case and a few small pieces of marble the size of a pea. Close the flask with the stopper carrying the thistle tube and introduce 2-3 drops of 0.1 N I<sub>2</sub> solution 1 drop of BaCl<sub>2</sub> solution. When the action of the acid on the marble slackens, heat gently. As soon as the first drop of condensate passes into the thistle tube, the color of the I<sub>2</sub> solution will fade and a precipitate of BaSO<sub>4</sub> appear. If a nephelometer is used the method can be made fairly satisfactory as a means of determining very small quantities of sulfite.

L4 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1922:19003 CAPLUS

DOCUMENT NUMBER: 16:19003

ORIGINAL REFERENCE NO.: 16:3232d-f

TITLE: Estimation of rubber as tetrabromide

AUTHOR(S): Utz, F.

SOURCE: Journal of the Society of Chemical Industry, London (1921), 41, 383A

CODEN: JSCIAN; ISSN: 0368-4075

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A weighed amount of rubber tetrabromide is put in a flask closed with a rubber stopper. This stopper is fitted with a tap funnel, the stem of which reaches nearly to the bottom of the flask, and with a bent glass tube which is connected with a set of absorption bulbs. The flask is immersed in a cold oil bath and a cooled solution of 1-1.5 g. of AgNO<sub>3</sub> and 4-8 g. of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 40 cc. of concentrated

H<sub>2</sub>SO<sub>4</sub> is cautiously added. After introduction of the whole of this solution the bath is gradually warmed to 135-40°. After 45 min. the reaction is ended and gentle suction is applied at the outlet of the absorption bulbs (the tap of the funnel now being opened) to carry over all the Br. The liquid in the absorption bulbs consists of 20 cc. of a mixture of 15% NaOH solution with a saturated solution of Na<sub>2</sub>SO<sub>3</sub> in equal vols. After the

reaction this

reagent is transferred to a flask, strongly acidified with HNO<sub>3</sub>

and its Br content determined. The rubber stopper outlasts a considerable number of detns.

L4 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1922:19002 CAPLUS

DOCUMENT NUMBER: 16:19002

ORIGINAL REFERENCE NO.: 16:3232d-f

TITLE: Estimation of rubber as tetrabromide

AUTHOR(S): Utz, F.

SOURCE: Gummi-Zeitung (1921), 36, 791-2

CODEN: GUZEA5; ISSN: 0367-5432

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB A weighed amount of rubber tetrabromide is put in a flask closed with a rubber stopper. This stopper is fitted with a tap funnel, the stem of which reaches nearly to the bottom of the flask, and with a bent glass tube which is connected with a set of absorption bulbs. The flask is immersed in a cold oil bath and a cooled solution of 1-1.5 g. of AgNO<sub>3</sub> and 4-8 g. of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> in 40 cc. of concentrated

H<sub>2</sub>SO<sub>4</sub>

is cautiously added. After introduction of the whole of this solution the bath is gradually warmed to 135-40°. After 45 min. the reaction is ended and gentle suction is applied at the outlet of the absorption bulbs (the tap of the funnel now being opened) to carry over all the Br. The liquid in the absorption bulbs consists of 20 cc. of a mixture of 15% NaOH solution with a saturated solution of Na<sub>2</sub>SO<sub>3</sub> in equal vols. After the reaction this

reagent is transferred to a flask, strongly acidified with HNO<sub>3</sub> and its Br content determined. The rubber stopper outlasts a considerable number of detns.

L4 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1915:12405 CAPLUS

DOCUMENT NUMBER: 9:12405

ORIGINAL REFERENCE NO.: 9:1956d-i,1957a-b

TITLE: The determination of dissolved oxygen in polluted waters

AUTHOR(S): Winkler, L. W.

CORPORATE SOURCE: Budapest

SOURCE: Zeitschrift fuer Untersuchung der Nahrungs- und Genussmittel sowie der Gebrauchsgegenstaende (1915), 29, 121-8

CODEN: ZNGEA2; ISSN: 0372-9419

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C. A. 9, 674. W. has modified his original method so that the presence of nitrites and moderate amts. of organic matter do not interfere with its accuracy. The modification consists in the addition of a solution of chlorinated lime and dilute H<sub>2</sub>SO<sub>4</sub> to the water at the time of sampling, the excess of CaOCl<sub>2</sub> being destroyed immediately before titration by means of KCNS. Fill a 250 cc. sample bottle almost completely with the water and add 10 drops (0.5 cc.) each of CaOCl<sub>2</sub> solution and 50% H<sub>2</sub>SO<sub>4</sub>, stopper and shake. The sample may then be reserved until any convenient time within 24 hrs. for analysis. The CaOCl<sub>2</sub> solution is prepared by rubbing 1 g. of fresh chlorinated lime (about 30% available Cl) with 100 cc. of Na<sub>2</sub>SO<sub>4</sub>.10H<sub>2</sub>O (25 g. per 100 cc.) and filtering the mixture. If the CaOCl<sub>2</sub> treatment is performed in the laboratory, at least 10 min. must be allowed before proceeding with the determination. Then add 2 cc. KCNS (1 g. c. p. white KCNS in 200 cc.

25%

Na<sub>2</sub>SO<sub>4</sub>.10H<sub>2</sub>O), shake, and allow the mixture to stand for 10 min. Add 1 cc. MnSO<sub>4</sub> solution (1 part MnSO<sub>4</sub>.4H<sub>2</sub>O and 2 parts water) and 2 cc. of KI-NaOH solution (2 parts NaOH, 1 part KI and 4 parts water) and 5 cc. of 50% H<sub>2</sub>SO<sub>4</sub>, or, if the water is very cold use 10 cc. of the last reagent.

When much Fe is present in the water use 5 cc. of 50% H<sub>3</sub>PO<sub>4</sub> instead of the H<sub>2</sub>SO<sub>4</sub>. Titrate with 0.01 N Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>. For the sake of uniformity this method can be applied to all kinds of waters except those heavily polluted with organic matter. In such cases only the gasometric method can be used. Introduce 10 g. of granulated marble, that has previously been freed from dust by sifting, into a 500 cc. bottle, and cover with a little acidified (HCl) water. When active evolution of gas begins pour off the dilute acid and then allow the water under exam. to flow through the bottle until the interior, including the marble fragments, is thoroughly washed. Then fill to the neck with the water and close with a one-hole stopper fitted with a cylindrical bulb (of 20 cc. capacity) the lower end of which communicates through the stopper with the contents of the bottle and the upper end of which bears an opening which may be fitted with a stopper and a capillary delivery tube for conducting the dissolved gases into a eudiometer. The stopper and bulb tube are fitted into the bottle containing the water in such a way that no air space remains below the stopper and the water rises to a height

of about 8 mm. in the bulb tube. If the amount of water in the bottle is insufficient for this purpose, add enough saturated  $\text{CaCl}_2$  solution (air-free) to accomplish it. Then fill the bulb tube to the neck with concentrated  $\text{HCl}$ , add a layer (1-2 cc.) of water and fit a capillary delivery tube into the neck of the bulb. Place the large bottle in a capacious vessel containing water at  $15^\circ$ , since this is the best temperature for controlling the evolution of  $\text{CO}_2$ . In a short time the  $\text{HCl}$  reaches the marble and  $\text{CO}_2$  is generated; this carries with it the dissolved air in the water. Collect the gas in a eudiometer over 20%  $\text{NaOH}$ , and when the volume of gas ceases to increase measure in the usual way. Determine the O by absorption in alkaline pyrogallol or alkaline

$\text{Na}_2\text{S}_2\text{O}_3$ . Deduct

0.192 cc. N and 0.083 cc. O as a correction for the gases dissolved in the concentrated  $\text{HCl}$  employed. For temps. between 0 and  $30^\circ$  W. has found the % of O in air dissolved in water to be  $n = 34.91 - 0.0438t$ , in which  $n$  = % of O in the air, and  $t$  = temperature

L4 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1915:10489 CAPLUS

DOCUMENT NUMBER: 9:10489

ORIGINAL REFERENCE NO.: 9:1641c-i

TITLE: The routine detection and estimation of boric acid in butter

AUTHOR(S): Hawley, Herbert

SOURCE: Analyst (1915), 40, 150-2

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Turmeric reagent: A mixt of 5 g. powdered turmeric root and 5 g. tartaric acid is digested with 3 successive portions of 150 cc. warm alc. (industrial methylated spirits is satisfactory). Each digestion should continue for not less than 1 hr. and each successive portion should be filtered, and the volume finally made up to 500 cc. with alc. The reagent should be kept in the dark. The method, which is rapid and approximate, is as follows: Place 20 g. of butter in a 40-50 cc. beaker, melt on a Cu tray over a water bath or steam oven, and keep warm until the curd and aqueous layer have separated, leaving the fat clear. Pour off the fat as far as possible onto a filter paper placed in a small beaker (taking care that none of the aqueous layer is poured onto the filter), and determine the consts. of the filtered fat in the usual manner. To the aqueous residue in the beaker add 18 cc. dilute  $\text{HCl}$  (20 cc. concentrate  $\text{HCl}$  per l.), stir, and keep warm for a few min. Allowing 2 cc. for the water in the butter, the 20 cc. of acid solution contains the  $\text{H}_3\text{BO}_3$  present in the butter, together with curd and a little fat. Remove 10 cc. of the fat-free liquid by means of a pipet dipped to the bottom of the liquid, and reject the liquid remaining in the beaker. Return the 10 cc. portion to the beaker. This portion is opalescent and almost free from fat, but contains a little curd. Allow the beaker to cool, and add 5 cc. of the turmeric reagent. The samples containing  $\text{H}_3\text{BO}_3$  slowly develop a reddish brown color, the intensity varying with the amount. Approx. estimates may be made by comparison with standards containing 0.5 cc. milk plus varying amts. of a standard  $\text{H}_3\text{BO}_3$  solution (1 g.  $\text{H}_3\text{BO}_3$  in 100 cc. dilute  $\text{HCl}$  (20 cc. concentrate  $\text{HCl}$  per l.)), the mixture being diluted to 10 cc. with the dilute  $\text{HCl}$ .

Milk may be preserved with  $\text{HCHO}$  for the purpose. Add 5 cc. of the turmeric reagent to each standard and make comparisons not less than 1.5 or more than 3 hrs. after the addition. An unmistakable color is developed in the presence of 0.05%  $\text{H}_3\text{BO}_3$ , and up to 0.5% can be estimated to the nearest 0.1%. The method is not recommended for samples containing more than 0.5%  $\text{H}_3\text{BO}_3$ . A simple device for rapidly measuring approx. 20 g. samples of butter consists of a 6 in. glass tube having a  $7/8$  in. bore. A

plunger is made by boring a hole nearly through a solid rubber stopper which will just slide into the tube. A piece of narrow glass tubing with a bulb at the end is inserted in the hole and string tied tightly around the narrow end of the stopper. The plunger is raised and the tube pressed into the butter. The plunger is then pressed down to the mark which is adjusted so that the tube then contains 20 g., and the butter pressed out into the beaker.

L4 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1909:9346 CAPLUS  
DOCUMENT NUMBER: 3:9346  
ORIGINAL REFERENCE NO.: 3:1738c-g  
TITLE: The Determination of Total Nitrogen According to E. A. Mitscherlich  
AUTHOR(S): Merres, E.  
SOURCE: Angewandte Chemie (1909), 22, 631  
CODEN: ANCEAD; ISSN: 0044-8249  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The method of Mitscherlich for soil extracts is rendered applicable by the author for determining total N in all other materials. A solution containing a known amount of 3-10 mg. N or a solid substance mixed with 200 cc. H<sub>2</sub>O is put into a liter Kjeldahl flask and 3 g. of Devarda's alloy added (Al 59, Cu 39, Zn 2). The flask is provided with a Hegershoff distillation bulb, the tube of which is bent and passes through a bulb into a 500 cc. Kjeldahl flask, reaching to the bottom. This second flask serves as a receiver and in it are placed 100 cc. of H<sub>2</sub>SO<sub>4</sub> (d. 1.6). Then add 50 cc. of strong NaOH solution through opening in bulb to first flask and close opening with stopper. Now heat first flask carefully till the reaction becomes weaker, raise flame and distil over about 50 cc., remove flame and let the H<sub>2</sub>SO<sub>4</sub> "suck back" completely, then heat again and distil over about 50 cc. and let "suck back"; this is repeated 3 times in order to rinse out the receiver. The first flask is now heated till the contents are blue-green in color, cooled, and the melt dissolved in a known amount of water. Either the entire amount or an aliquot is distilled as follows: The distillation flask is provided with a bulb as before and connected to a 250 cc. Kjeldahl flask which is closed by a two-hole stopper; through the second hole a twice bent tube of fused quartz passes, the free end of which extends through a bulb into a 200 cc. Erlenmeyer flask almost touching the bottom. This flask is the receiver and in it is placed a suitable amount of 0.02 N acid. The necessary amount of NaOH is added as before to the first flask and it is then heated; distillation is complete in 20-30 min. The distillate is titrated back with 0.02 N NaOH, using congo red as indicator. A blank is run with each set of determinations and corrections made accordingly. The author claims an accuracy of  $\pm 0.000012$  g. and that this method is more accurate than the Jodlbaur or Forster methods in which the material must be in solid form. He calls especial attention to the use of a second flask and the quartz tube in order to get accurate results. The method is recommended for water analysis.

L4 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1908:4151 CAPLUS  
DOCUMENT NUMBER: 2:4151  
ORIGINAL REFERENCE NO.: 2:977g-i,978a-c  
TITLE: Color Reactions of Pinolin  
AUTHOR(S): Grimaldi, Carlo  
CORPORATE SOURCE: Chem. Lab., Zollverwaltung, Verona  
SOURCE: Chemiker-Zeitung (1908), 31, 1145-6  
CODEN: CMKZAT; ISSN: 0009-2894  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB A color reaction is described that permits the detection of 5% of pinolin or rosin spirit mixed with turpentine oil or 10% mixed with pine tar oil. The substance to be examined is carefully fractionated up to 170°. The fractions are treated cautiously with an equal volume of cone. HCl in test tubes, a small piece of tin added and the tubes placed in boiling water. After 5 min. they are thoroughly shaken, replaced in the bath and shaken from time to time. Under these conditions, pure pinolin and its lower boiling fractions give a green color after 5 min. and the color becomes more intense upon cooling. Substances like turpentine oil, pine tar oil, camphor oil, mineral oil, etc., which resemble rosin spirit in physical and chemical properties, give colors with the reagent varying from straw-yellow to brown. The second reaction described is a modification of the Halphen test for rosin spirit (J. pharm. chim., 1902, 408). The reagent consists of 3 cc. bromine dissolved in CCl<sub>4</sub> to make 15 cc. It is contained in a glass cylinder with ground stopper carrying a peculiar stopcock that makes it possible to close the cylinder completely or to connect it with two glass tubes, one of which is attached to a rubber bulb and the other to an inverted funnel. A drop of each of the pinolin fractions is placed in a porcelain evaporator, and treated with 2 cc. of a reagent consisting of one volume of melted phenol crystals and 2 of CCl<sub>4</sub>. After the contents of the evaporator has been thoroughly mixed, it is placed under the inverted funnel, the stopcock opened and the bulb carefully pressed. A yellow color appears on the surface of the liquid and on the walls of the vessel. With pinolin boiling below 170° the yellow color appears at once and changes in a few minutes, to a green. With mixtures the color takes longer to appear but it is possible to detect less than 1% of pinolin in mixtures with turpentine oil or pine tar oil, providing sufficient of the material is available to make a number of fractionations. The two reactions described can of course be carried on simultaneously.

L4 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1908:3173 CAPLUS  
DOCUMENT NUMBER: 2:3173  
ORIGINAL REFERENCE NO.: 2:737h-i  
TITLE: A Ferment Saccharometer with Glycerol Indicator  
AUTHOR(S): Goldmann, F.  
SOURCE: Berichte der Deutschen Pharmazeutischen Gesellschaft (1908), 17, 62-6  
CODEN: BERPAZ; ISSN: 0365-9925  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The old form of the apparatus consists of a U-tube having on one arm a bulb closed with a heavy stopper and on the other graduations. It is filled with mercury to the zero mark and the sample of urine containing a little added yeast is placed over the mercury in the bulb arm, and the amount of rise of mercury in the other arm after the fermentation, gives the percentage of sugar in the sample. The new ferment saccharometer is filled with glycerol instead of mercury, and a shorter U-tube is joined to the bulb end of the apparatus in which the sample of urine rests out of contact with the glycerol.

L4 ANSWER 19 OF 21 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1970:87738 INSPEC  
DOCUMENT NUMBER: B1970-004002  
TITLE: Gas filled cold cathode indicator tube  
AUTHOR: Koshizuka, M.; Ohfuji, N.; Sato, S.  
PATENT ASSIGNEE: Nippon Radio Co. Ltd  
PATENT INF., ORIGINAL: US 3437861 19690408  
APPLICATION INFORMATION: 19660214

PRIORITY INF., ORIGINAL: JP-40/9396 19650219

DOCUMENT TYPE: Patent

COUNTRY: United States

LANGUAGE: English

AN 1970:87738 INSPEC DN B1970-004002

AB A discharge type indicator tube having a stem which includes a shell and an insulator spacer for supporting and locating a plurality of cathode electrodes which have predetermined shapes. If a shell is fabricated from an insulating material, it may also function as the spacer. The stem also provides means to pass lead wires from the cathodes there through and the shell is adapted to be sealed to the lower portion of the tube bulb, thereby closing off the tube

L4 ANSWER 20 OF 21 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1960:B07974 INSPEC

DOCUMENT NUMBER: 1960B07974

TITLE: Detection and identification of distillates in tubes

AUTHOR: Gobin, M.

SOURCE: Le Vide (May 1960 - June 1960), vol. 15, p. 263-267

DOCUMENT TYPE: Journal

COUNTRY: France

LANGUAGE: French

AN 1960:B07974 INSPEC DN 1960B07974

AB In order to identify deposits and stains which occur on the components of electron tubes the parts are removed using non-contaminating tools. They are individually wrapped in a suitable filter paper impregnated with an appropriate reagent and this package is then sharply compressed between mica sheets. The paper in contact with the part being investigated shows a print of the deposit on the component which can then be interpreted by normal chromatographic methods. Examples are given of the identification of barium, strontium and nickel deposits on tube micas. Internal bulb deposits can be identified by slightly modifying the procedure. Theoretically all elements giving a characteristic coloured drop reaction can be detected down to the sensitivity limit of the reaction.

L4 ANSWER 21 OF 21 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 1923:A01131 INSPEC

DOCUMENT NUMBER: 1923A01131

TITLE: Stark effect on hydrogen secondary spectrum

AUTHOR: Kiuti, M.

SOURCE: Japanese Journal of Physics (1922), vol. 3, no. 4, p. 29-39

DOCUMENT TYPE: Journal

COUNTRY: Japan

LANGUAGE: English

AN 1923:A01131 INSPEC DN 1923A01131

AB An investigation in the visible region, special attention being given to the Fulcher bands. The method employed was Lo Surdo's. The discharge tube was in the form of a Pluecker tube, with one of the end bulbs removed. The capillary was 1 mm. in diameter. A continuous flow of hydrogen was maintained by an oil-immersed rotary pump. The gas was washed with water and concentrate sulphuric acid, and entered

a 2-litre flask; this flask was connected to the discharge tube by a capillary of 0.1 mm. bore and length 1 m. Another 2-litre flask between the pump and the tube helped to keep the pressure stationary. The length of the Crooke's dark space was about 2 mm.; this served as an indicator of pressure fluctuations. The portion of the capillary 2 mm. from the cathode was focused on the slit of the spectroscope, using two lenses; a quartz Wollaston prism placed between



the lenses separated the p- and s- components. A plane grating with 590 lines per mm. was used; the dispersion in the first order was 31 A.U. per mm. Owing to the arrangement employed, for many lines the image with no field was too feeble for use as a standard, and so a comparison Pluecker hydrogen tube was used. Exposure was 12-2 hours. Two 5000-volt d.c. dynamos were used in series, with a 300,000 ohm manganin resistance in the circuit to make the discharge more stable. The terminal voltage of the tube was 4000 to 6000 volts, being kept constant during an exposure by regulating the exciting current to the dynamos. The intensity of the field was deduced from the separation of the Balmer lines; it was found that the present results were more nearly in agreement with Epstein's theory than Stark's results. More than 100 lines are found to be affected by the strength of field used and under the present dispersion; most of these were on the long wave-length side of  $\lambda 5300$ . In most cases the lines were displaced towards the red, or separated asymmetrically. The lines most affected were in the neighbourhood of  $\lambda 5400$  and  $\lambda \lambda 5930-5982$ . In all instances the separation increases either in proportion to, or more rapidly than, the field intensity. Between  $\lambda 5300$  and  $\lambda 5700$  the relative intensities of the Pluecker tube and the positive rays are very different; e.g.. The first and third members of the second Fulcher band are weakened in the positive rays as one goes out from the head, alternately. No simple rule was found for the Fulcher bands. In both bands the effect on the first and third members is large and small alternately; this may be of importance in deducing the structure of the origin of the secondary spectrum. Tables of results are given, and a photograph.